

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 81.

NEW YORK, SATURDAY, OCTOBER 4, 1902.

NO. 14.

ORIGINAL ARTICLES.

WANDERING KIDNEY, AND THE RESULTS OF OPERATION.*

BY CLARENCE A. MCWILLIAMS, M.D.,

OF NEW YORK;

ASSISTANT SURGEON TO PRESBYTERIAN, AND TRINITY HOSPITALS, NEW YORK.

ALTHOUGH the conditions known as movable and floating kidney were first recognized by Rayer, in 1841, it is only within the past 10 years that the subject has been more completely brought to attention by reason of the greater care employed in observing and diagnosing abdominal diseases. The general practitioner who sees the majority of these patients has been a little tardy in recognizing the possibility of the dependence of gastric and intestinal symptoms, reflex neuroses, etc., upon displacements of the abdominal viscera. It is due to the observations and deductions of the gynecologists and the specialists in abdominal surgery that particular attention has been directed to an abnormal mobility of the kidney as a frequent contributing factor, if not the actual cause of much ill-health among women. That these specialists have placed too much weight upon the importance of this condition may, perhaps, with justice be maintained; but the general practitioner who sees and treats these patients before and after operation must in the last analysis be the umpire as to the advisability or non-advisability of subjecting them to an operation. In many cases the general practitioner turns his patient over to the surgeon for operation, after he has failed in producing marked improvement by medical means. Hence the physician is the one to judge whether more is accomplished by surgical procedures than by medical means, by an impartial comparison of the conditions before and after operation; and in making this statement the admission is forced upon us that possibly the early enthusiasm with which some surgeons hailed the operation, and executed it, will not be found warranted, if we trace these patients some years after the operation. The status of the procedure is as yet an undefined one.

The following article has been written in the light of the cases presenting themselves at the Presbyterian Hospital for treatment, and is a report upon all the patients operated on for this complaint, to the number of 61. An endeavor has been made to get in communication with them all, and to examine as many as possible. Of the whole number, 61, it has been possible to get news from 45. The first operation in the Hospital for movable kidney was done on May 7, 1888.

We define a movable kidney as a displaced, and not fixed kidney, whose movements are sub-peritoneal; and a floating kidney as one which moves intra-abdominally, being surrounded by peritoneum, forming a mesonephron. To both classes we assign the general name "wandering kidney," as it is not possible to diagnose between the two conditions without operation. It is not recorded as verified by operation that a floating kidney (*i.e.*, one with a mesonephron) existed in any of our cases.

Frequency.—Wandering kidney is very frequent, so that it is difficult to determine what is pathological and what is normal. Its frequency is variously estimated. Küster of Berlin found that 4.41 per cent. of the women, consulting him in his general surgical practice, had pathologically movable kidneys. Golet and Edebohls of New York each found that 20 per cent. of the women coming to them for gynecological treatment had movable kidneys. Harris of Chicago examined 126 women, and found 56 per cent. had palpably movable kidneys. Beyer of Philadelphia gives 15 per cent. of his patients as having movable kidneys. Glénard, from his experience as a physician at the Thermal Hospital, in Vichy, met with 537 cases in 4,215 patients examined, or a proportion of 14 per cent. of all patients, males and females, and 22 per cent. of all the females.

Degrees of Mobility.—The kidney normally presents respiratory movements. The mildest degree of mobility is where half of the kidney is palpable on deep inspiration, after which it slips back again under the costal arch. A marked degree exists when the whole kidney is palpable beneath the costal arch where it remains after expiration. Between these conditions we have to judge whether movability is abnormal, or not, by the symptoms suffered. The most marked degree is where the kidney is found in distant parts of the abdomen, as in the right iliac fossa or in the pelvis, and when it can be pushed about the abdomen.

Means of fixation of the normal kidney.—(1.)

Mechanical.—The kidney surrounded by its fatty capsule lies between two layers of the renal fascia which join together on the outer, inner, and upper sides of the kidney, while at the lower pole the two leaves are lost in the loose tissue of the iliac fossa, so that there is left a weak place below. It is believed by many that the fatty capsule must undergo absorption before the kidney can become dislocated, but this is not always true, because the kidney often is sufficiently movable within the intact fatty capsule itself to become displaced; while again in other cases the normal fatty capsule, together with the kidney as a whole, may become movable and dislocated.

* Prepared for Medical and Surgical Report of the Presbyterian Hospital, New York, Vol. V, 1902.

There is an additional strengthening of the supports of the kidney by a fine scaffolding of connective tissue stretching between the capsula propria and the renal fascia. This may readily break or stretch.

(2) *Dynamic.*—Of the very greatest importance in holding the kidney in place is the intraperitoneal pressure. This applies equally well to the other abdominal viscera. Conditions which decrease this pressure undoubtedly assist in producing mobility of the kidney.

Sex.—Among the 61 cases of our series, only two occurred in men, while 59 were among women, or 96.7 per cent.

Marriage.—Excluding the two men, 38 patients, or 64.4 per cent. of the women, were married, while 21, or 35.6 per cent., were single. Of the 38 married women, only 22, or 37.2 per cent., of the whole 59 had borne children, the average number of children to each one being 2.7. Consequently, from this it is seen that excessive child-bearing has been no factor whatsoever in the production of wandering kidney in our cases. The greatest number to any woman was six, one had had five, two had had four, eight had had three, three had had two children.

Location.—

Right kidney movable in 33 cases, or 86.8 per cent.
Left " " " " " " " " " " " "
Both kidneys " " " " " " " " " " " "

Age.—The average age of the patients was 33½ years; the youngest 17, the oldest 65.

Between the ages of 20 and 25 years there were 9 cases
" " " " " " " " " " " "
" " " " " " " " " " " "
" " " " " " " " " " " "
" " " " " " " " " " " "

Etiology.—I. *Acquired.*—(a) Due to lowering of intra-abdominal pressure.

1. After extirpation of great tumors or ascitic collections. None in our series.

2. Numerous pregnancies—not found to be an element of etiology in our cases, as only 21 out of 59 had had children, the average being only two children per person. The greatest number to any woman was six.

3. Excessive emaciation. This was found in only two cases.

4. Tight-lacing. No evidence in any of our cases at time of operation.

5. Prolapse of the uterus and vagina, with lacerations of the perineum, may possibly contribute to the reduction of intra-abdominal tension.

6. Retrodisplacements of the uterus by drawing on the ureters may possibly tend to dislocate a kidney.

These causes certainly are not of great importance in producing mobility.

(b) Spinal scoliosis may cause the kidney to be pushed down, owing to a decrease in the space normally occupied by it. No case illustrating this point in our series.

(c) Trauma. In only seven of our cases, or 11.4 per cent., was there a history of a trauma antedating the symptoms referable to the kidney. Two of these stated that while lifting a heavy weight something seemed to give way in the side. In the other five there was a direct fall upon

the right side. If a trauma acts as a direct exciting cause for movable kidney, then it would follow that we should find it more frequently in men than in women, because the former are so much more exposed to injuries. This is not the case.

(d) The transitory hyperemia of the kidney during menstruation has been suggested as a possible cause of loosening of the capsules.

II. *Inherited or Congenital Causes.*—Probably most cases rest on congenital causes, although this is hard to prove.

III. *Unknown Etiology.*—Fifty cases, or 81.9 per cent., belong under this head. Probably in most cases renal mobility is due to a combination of several causes, of which we are as yet very much in ignorance.

Harris of Chicago* has made a set of interesting observations on 126 women, chosen at random, to determine what influence bodily build has on the production of movable kidneys. He maintains "that the essential cause lies in a peculiar and particular body form, characterized by a marked contraction of the lower end of the middle zone of the body, with a diminution in the capacity of this part of the body cavity. This middle zone is bounded above by a transverse plane passing through the body at the lower end of the sternum proper, not the xiphoid appendix, while the lower boundary is formed by a similar plane which cuts the lowermost points of the tenth ribs. That this diminution depresses the kidney so that the constricted outlet of the zone comes above the center of the organ, and all acts such as coughing, straining, lifting, flexions of the body, etc., which tend to adduct the lower ribs, press on the upper pole of the kidney, and crowd it still farther downward; and it is the long-continued repetition, in a suitable body form, of these influences which collectively may be called internal traumata, that gradually produces a movable kidney. A distinctly movable kidney is never the immediate result of a single injury or external trauma."

Secondary changes in a dislocated kidney.—

(1) Paranephritic adhesions may bind it down in an abnormal situation, so that it cannot be replaced without an operation.

(2) From kinking of ureter brought about by movements of kidney, there may be produced a hydronephrosis; and, *vice versa*, the weight of a hydronephrotic kidney may cause a dislocation of the kidney.

(3) Twisting of the renal vessel may produce passive congestion of the kidney, resulting in considerable increase in its size, as well as tenderness. May this not also predispose to structural changes in the kidney, and be the starting-point of a nephritis?

Secondary changes in other structures produced by a dislocated kidney. (1.) May press on duodenum, producing stomach dilatation, also on intestines, producing mucous enterocolitis, etc.

* Journal of the American Medical Association, June 1, 1901.

(2) May press on bile-ducts, producing obstructive jaundice. This happened in one of our cases, or there may be typical attacks of colic simulating gall-stones, due to gall-bladder distension. Weisker calls attention to the close connection of the ligamentum hepato-duodenale to the bile-duct which lies in its sharp border; and as that fold is directly continuous with the peritoneal capsule of the kidney, it is difficult to imagine any very great displacement of the kidney taking place without an interference with the duct.

(3) Pressure on superior mesenteric vein may cause congestion in cæcum and appendix, producing symptoms resembling appendicitis. There were nine such cases in our list, in which the appendices were removed.

(4) Pressure and disturbance in the abdominal sympathetic may produce a variety of reflex neuroses from side of stomach, intestines, heart, general nervous system, genital apparatus, etc.

(5) May press on bladder, uterine adnexa and produce irritative and congestive disturbances. This is clearly shown in one of our cases. Operation relieved these entirely.

Symptoms.—1. *Subjective Symptoms.* Class

1. Those in whom the movable kidney causes no symptoms, and is discovered by the doctor in the course of routine examinations. Most of the cases belong under this category. To persons of hypochondriacal tendencies, knowledge of such a condition, revealed to them by a careless physician, may cause the beginning of complaints referred to that kidney.

Class 2. Cases with actual symptoms, which may be caused by the dislocated kidney, apart from other independent abnormalities.

(a) Pain. Some of the patients complain that after long standing, or unusual bodily exertion, painful sensations make their appearance, generally on the right side of the abdomen, either dull or sharp or dragging, localized over kidney, or radiating to back or chest, or very frequently down right thigh. Severe backache in 12 of our cases was complained of. Lying down commonly relieves this discomfort. In 24 of the cases the pain was localized distinctly in the right kidney region, and of a dull ailing character. In 10 of the cases the pain was sharp and renal in character, and shot down into the thigh. In 13 cases the pain was localized in the right side, and associated with severe backache. In seven cases there were attacks similar to mild renal colic, the pain shooting down into the bladder, and in four others shooting into the back, while in two cases the sharp pains shot up into the right shoulder. Nine of the patients noticed movable masses in the abdomen, and two patients felt a movable tumor on each side of the abdomen. It is the pain which sends these patients to the physician, and it is almost constantly present in some form where movable kidney is at the bottom of the trouble. Usually, however, this pain is associated with various other symptoms which may lead the physician astray. The difficulty is to decide when

the pain is due solely to the movable kidney, or when to co-incident and independent causes. Sometimes lying on the left side, which allows the right movable kidney to fall over toward the left, will cause considerable pain. The pain in seven of our cases was much worse during menstruation.

(b) Disturbances of gastro-intestinal tract are of very frequent occurrence. In 25 of our patients a history of distinct gastric indigestion was given, extending over a considerable period; 11 others gave a history of vomiting during the severest part of the attacks of pain; 28 gave a history of marked constipation; nine gave evidences of a coincident appendicitis; one case had had attacks of jaundice; three gave a history of attacks of diarrhea.

Bramwell* reports a case with autopsy which he says shows: "1. Recurrent intermittent spasm of the pylorus may proceed to such an extent as to lead to a mechanical stenosis, causing most aggravated form of gastric dilatation. 2. That such a pyloric stenosis may be the direct result of intermittent traction of a movable kidney. 3. That an acquired movable kidney does not move up and down in a space behind the peritoneum, but carries its peritoneal covering with it, stretching the inferior reflection of the peritoneum to some extent, and gliding over the angle of this reflection, while at the same time it stretches and drags upon its superior and internal reflections, drawing these into distinct bands which directly drag upon the pylorus; and the only true remedy for such a condition is to fix the kidney." Franks described a similar case of peritoneal band stretching from duodenum to a movable kidney.

(c) Urinary symptoms in our patients were not prominent; 18 gave some history of urinary trouble. Nine said that micturition was simply increased in frequency, while in four others it was not only frequent but painful as well, two had simply occasional pain on micturition, one had attacks of incontinence, two others complained of increased frequency with occasional hematuria, while five said they passed an increased amount of urine at the end of the attack. One patient, from whose movable kidney at the time of operation a calculus was removed, had never had any urinary symptoms whatsoever. Her whole complaint was of a sharp right-sided pain. Two patients at the time of the operation had chronic nephritis. One had a suppurative pyelitis (No. 40).

(d) Many show symptoms of reflex neuroses of various kinds, nervousness, easily fatigued, headaches, depression, often insomnia, and cardiac palpitation; 11 of our cases were decidedly neurasthenic. Probably this number is not sufficiently large, as the presence or absence of this condition is not noted in the earlier histories.

(e) Some give a history of attacks like renal colic, due either to kinking of ureter, or to twisting of renal vessels. Some of our patients gave histories of attacks of fairly typical renal colic.

* British Medical Journal, October 19, 1901.

Attacks of this character are, as a rule, immediately relieved by replacing the kidney in its proper position.

Class 3. Those in whom symptoms of dislocated kidney are only a part of a general enteroptosis. Five such cases are contained in our list, but here again the histories are probably deficient. It is a great question whether nephropexy is indicated in this condition.

2. *Objective Symptoms.*—The women suffering from wandering kidney are very frequently found to belong to an almost characteristic type. They are usually very thin, lank, and with a long-built thorax, almost emaciated; have weak musculatures, abdominal walls are relaxed and flabby, are nervous, and often mentally depressed. To establish the diagnosis, one must find a more or less movable tumor in the abdomen which has the size, shape, and consistency of the kidney. It may not be evident on the first examination, but a second or even a third observation may reveal a very evident dislocation.

A careful method of examination should be pursued and various devices resorted to before giving a definite opinion. With the patient on her back, and thighs flexed on the abdomen, the examiner, being on her right, inspects carefully the abdomen to note its appearance, and the presence of any prominence anywhere. He then palpates the abdomen gently to note any unusual condition, and then places the flat of the left hand behind and just below the twelfth rib, exerting gentle pressure forward, so as to bring the kidney into prominence. The other hand is placed upon the abdomen in front, below the border of the ribs and external to the rectus muscle. The patient then takes a deep inspiration, followed by a quick expiration, when the examiner approximates the two hands, at which time one-half or two-thirds of the kidney, if it be movable, can be grasped, and often can be made to slip upward from between the hands with a sudden jump, as it drops again into its hollow. If this does not elicit a movability of the kidney, the patient should take successive inspirations and expirations. At the end of each expiration, the front hand is crowded farther and farther in, and held stationary during the inspirations. The value of this procedure consists in the fact that the kidney, descending with the inspirations, cannot return into its niche, owing to the increasing bimanual narrowing of the opening into this hollow. In some cases the two hands will meet above the upper pole of the kidney, which may be well palpated, and the pulsations of the renal vessels felt. At times the dislocated kidney may become more apparent by having the patient sit up in bed and bend forward, or the kidney region may be palpated while the patient stands up. The knee-chest position may be utilized to cause the kidney to fall forward. In addition, the patient may lie on the left side, with the thighs flexed on the abdomen, in order to cause the kidney to fall internally and downward.

The presence or absence of normal kidney dul-

ness, as elicited by percussion, is too uncertain to be of any differential diagnostic value.

Careful differential diagnoses must be made from diseases of other abdominal organs:

(1) *Distended Gall-bladder.*—There is a difference in the fixed points of the gall bladder and the kidney, accounting for the difference in direction of movability, the bladder moving from side to side, while the kidney moves up and down. With the patient lying on the left side this will become clearer. The gall-bladder lies superficially and more anteriorly. The kidney is deep in posteriorly. The gall-bladder on successive examinations will be found each time to have a constant position, while a movable kidney may be found in very varying situations.

(2) *New Growths in the Abdomen,* particularly *Ascending Colon Tumors.*—Both may lead to colicky paroxysms and nausea which cause errors in diagnosis. The movement of these tumors is limited mostly to a transverse direction, and they can be moved upward or downward to only a slight degree. Sometimes the patient gives a history of the appearance at times of a smooth, hard, ovoid body in the right abdomen, with colicky pains. This body may disappear, coincident with the subsidence of the symptoms. This is due to the periodic distention of the intestines, proximally situated to the tumor, and if the hand is quietly laid upon the abdomen till the pain subsides, one will feel and hear the gurgling of the gas as it passes the obstruction.

(3) *Cancers of the Pylorus.*—These cause greater cachexia and severer stomach disturbances, while the tumors are situated higher and nearer the median line, and are not variable in their successive examinations.

(4) *Impacted Feces.*—This tumor disappears after the exhibition of purges and enemata.

(5) *Cyst of Pancreas.*—This condition rarely occurs, and the tumor is not movable, nor variable in the location of its appearance.

(6) *Ovarian Tumors.*—These ought to be differentiated by the history and a bimanual vaginal examination.

(7) *Other Kidney Affections,* such as *Tumors and Calculi.*—Careful attention to the symptoms and examinations, particularly the urinary, will give in most cases clues to the diagnosis, while a ureteral catheterization will often clear up doubtful cases. In movable kidney, the symptoms generally subside on lying down, and replacement of the organ. If pain occurs at night and after reposition of the organ, then it is quite likely that some other kidney affection is present.

(8) *"Riedel's," or "Tight-laced," Lobe of Liver.*—This abnormality has been the cause of error in diagnosis and subsequent ineffectual operation. This happened once in our series.

A careful examination should be made of all the abdominal organs to ascertain their condition and position. This applies especially to the liver, stomach dilatation, position and size of spleen, state of the appendix vermiformis, and particularly the condition and position of the pelvic or-

gans. Many of these women have associated pelvic derangements, retrodisplacements of the uterus being common, with possible prolapse of the ovaries. Too much stress must not be placed upon the movable kidney as the cause of the symptoms, to the exclusion of the possible effects of the malpositions and inflammations in the pelvis. Proper measures should be taken to correct all the abnormal conditions in the abdomen if a good result is to be looked for. Herein lies the difficulty in treating these cases, because it is difficult to determine how many of the symptoms are due primarily to the movable kidney, hence suitable for nephropexy.

Therapy.—The position of this hospital has always been a conservative one as regards the treatment of wandering kidneys. In general, perhaps, there has been among surgeons too great an operative activity in this field, because: (1) Symptoms have been referred to the wandering kidney which have, in many cases, arisen from other sources, such as the neuropathic condition, disturbances arising from the genital apparatus, alimentary canal, etc. (2) The wandering kidney is in many cases only one part of a more or less general enteroptosis of the abdominal organs, in which condition nephropexy will do but very little good, if not harm. (3) There has been too great an optimism as regards the final good results of the operation in relieving symptoms. This is clearly shown in the reports of cases followed for some time after operation, in which it is quite evident that the results, so far as a cure of symptoms is concerned, are somewhat disappointing. Results will be quoted later.

Treatment resolves itself into: (1) Therapeutical. (2) Mechanical. (3) Operative.

Following Israel, it is our belief that the only absolute operative indication occurs in those cases having colicky attacks which are the result of pulling or kinking of the pedicle, particularly if these attacks are accompanied by temporary or lasting retention. In the remaining cases, non-operative methods first are to be employed, and these will in most cases relieve very considerably, if not cure. In the event of their failure, operation is to be advised.

In laying out a therapeutical line of treatment, the first requisite is to ascertain the exact condition of all the bodily organs, more particularly the nervous system, the gastro-intestinal functions, the genital apparatus, the position of the abdominal organs, etc.; after which means are applied to combat the abnormal conditions. The patients must be prevented from overanxiety and worry, and are to be encouraged to look for a favorable outcome.

The general health and weight may be increased by the Weir Mitchell rest-cure and forced feeding, which will also improve the nervous symptoms. Atony of the abdominal walls, displacement of the intestines, with deficient peristalsis and tendency to gas-formation, will be combated by massage, gymnastics, electricity and hydrotherapy, bandages and tonics. Long stand-

ing should be interdicted. Women whose symptoms, referable to wandering kidneys, are worse at the menstrual periods should remain in bed some days before and during the period. General treatment should always be combined with mechanical treatment, which consists in the application of some kind of an abdominal supporter. A cushion alone in front to support the kidney had better not be employed, because it generally will not succeed in holding the kidney in place, and, secondly, its pressure on the kidney may be dangerous, causing albumin, casts, and red-blood cells to appear in the urine. Any arrangement to bring relief must provide for an equal increase in the whole intra-abdominal pressure, and must take the place of the lost tone of the relaxed abdominal wall, and raise up a hanging abdomen. An equable increase in the intra-abdominal pressure decreases the possible excursion of the kidney. An elastic corset to meet these indications is made as follows, and I take the description from Israel, of Berlin: The corset is made of material similar to an elastic stocking, and is woven to fit each patient. The median closure line is strengthened by a steel spring. The corset extends as high as an ordinary corset, and as low as will allow the sitting posture without discomfort. From corresponding portions of the corset, just above the symphysis, go to each side two broad elastic girdles which encircle the pelvis just above the inguinal folds and are fastened to two short pieces attached to the sacral region. These elastic girdles are intended to raise up the lower abdomen. A second pair of girdles runs around the flank, starting from the same place as the first pair, one on each side, obliquely upward and outward between the iliac crest and the ribs, and are fastened with hooks and eyes behind at the height of the middle lumbar vertebra. Through these obliquely upward-running girdles a particular elastic pressure is exercised upon the entire territory into which the kidney can sink. This pressure, if thought best, can be increased through a three-cornered air-cushion fastened to the inner side of the corset in this manner—the upper slightly concave edge lies just below the costal arch. Its rounded point fills the interval between this and the iliac crest, while its median base reaches to the mammillary line. Over this cushion runs the upper girdle, and presses dorsally and upward the covered part of the abdomen. This supporter is put on before arising in the morning, the buttocks being elevated, and after crowding the abdominal contents upwards.

A less expensive procedure is that devised by Gallant, who has the patient obtain one of the at present fashionable straight-front corsets, two sizes smaller than usual. The patient is advised not to get up in the morning until she has applied the corset, which is put on with the pelvis elevated, the kidney having been replaced in its proper position. The corset is hooked from below up, at the same time crowding all the abdomen upward within the corset as it is hooked.

Persons with movable kidney may be the vic-

tims of attacks apparently very similar to renal colic, so called Dietl's crises. Examination may show a dislocated kidney, tender and largely increased in size. These attacks may last for hours or for days, to end suddenly on the return of the kidney to its normal position. This is often followed by the passage of an increased amount of urine, which may previously have been scanty. This condition is due either to kinking of the ureter, or twisting of the renal vessels, or, perhaps, more often, to a torsion of the whole pedicle at once, vessels and ureter together. The palliative treatment of these attacks is to replace the kidney, and to undo the twist of the pedicle. To accomplish this latter, the mechanism of its origin must be understood. The wandering kidney turns about its transverse axis, in such a way that the lower pole of the descending kidney finally impinges upon the anterior abdominal wall, and this prevents its farther descent. If the upper pole still farther descends without change in position of the lower pole, then the upper pole must come to a lower level than the lower one, i. e., twisting of the kidney about its transverse axis, the pedicle acting as this axis, which will only be increased by any muscular contraction of the abdominal walls. To arrive at this abnormal position, in which the lower pole is turned forward and upward, the upper pole behind and below, the arc of rotation has been from 80 to 180 degrees, which is amply sufficient to cause severe circulatory disturbances in the relatively short pedicle. If this view of the etiology is correct, then treatment (with the patient recumbent and hips elevated) consists in grasping the kidney tumor in front and behind with the hands, and in seeking to give it such a turning that the lower pole, which has become temporarily the upper and forward one, then will descend along the inner side of the anterior abdominal wall while the upper one, temporarily the lower, will ascend along the front surface of the posterior abdominal wall, to return to its hollow beneath the diaphragm. This procedure is eminently rational in the suitable cases. Should, however, as some maintain, the twisting of the pedicle take place in the opposite direction then a reversed method of treatment is necessary.† If these procedures do not replace the kidney, then the recumbent position should be maintained till the attack is over. In the case the attack grows worse from day to day, then operation, nephropexy, is indicated. Should this be refused by the patient, then the fluid in the sack may be drawn off retroperitoneally by an aspirating syringe, in the hope that relief from pressure may result in relief of obstruction.

Operative Procedures.—If after thorough trial of therapeutical and supporting measures, the symptoms referable to the kidney still persist, then our only recourse is to operate, but the patient must be cautioned against expecting too much from the nephrorrhaphy, and a guarded prognosis given to avoid future disappointment.

† Owing to the difficulty of correct diagnosis as to the direction of this revolution, care must be exercised in these manipulations lest the twist of the pedicle be increased instead of decreased.

Technic.—Two varieties of nephropexy have been employed in the Presbyterian Hospital, depending upon the operator. One method is as follows: A longitudinal lumbar incision is made with the patient in the semi-prone position, an air-cushion being placed beneath the opposite ilio-costal space, which makes the ilio-costal region on the side to be operated upon as broad as possible. The incision extends from the lower rib to the iliac crest, the lumbar artery encountered is cut between clamps, and the nerve with it is pushed to one side and not cut. This exposes the outer body of the quadratus lumborum muscle. A deep retractor holds the outer edge of this muscle internally. The fatty capsule surrounding the kidney now presents in the wound, and it is opened longitudinally, and the kidney located within this fatty capsule, which is then stripped off from the anterior and posterior surfaces of the kidney. With an assistant exerting pressure on the anterior abdomen against the kidney, an endeavor is then made to bring the kidney out into the wound, so that it may be inspected and palpated thoroughly for any existing pathological condition, either in its pelvis or parenchyma. The fibrous capsule lying close to the kidney is incised, either along the convex outer border, or on the posterior surface of the kidney, and the edges of the capsule on either side of the incision are dissected off from the kidney, making two small strips of capsule between which is raw kidney tissue. Three chromicised gut sutures on a carpet-needle (to prevent oozing) are then passed directly through kidney parenchyma beyond the raw area, i. e., from anterior to posterior surfaces, well within the convex border, at intervals of about an inch. The highest of these sutures is often passed around the lowest rib at a point where the periosteum has been reflected from its surface. This prevents opening of the pleura. The other chromic gut sutures are then passed through the lumbar fascia and the quadratus lumborum muscle, but not tied. The small strips of fibrous capsules are then sutured by a few chromic gut sutures to the fascia and muscle on each side of the lumbar incision, leaving the raw place between these strips. Then, finally, the parenchyma sutures are tied, and the kidney is held well up under the last rib. A narrow gauze strip surrounded by a cuff of rubber tissue is inserted down to the kidney. This is important for two reasons: 1. It acts as a drain. Should a blood-clot form between kidney and muscle, then the kidney would be separated from the muscle, which might prevent proper union, a result most important to obtain. 2. The drain acts as an irritant and thus favors the formation of connective-tissue adhesions between the kidney and the muscles. The incision is then sutured carefully in layers in order to prevent lumbar hernia, a result which has more than once occurred. This method has been mainly employed by Dr. McCosh. Transfixion of the kidney by the sutures has found many advocates, among whom are Israel

of Berlin, Kocher, Tillmann, Stimson, Kelly, etc. The objections advanced by its opponents have been: The possible danger of infecting the kidney tissue, and the damage done to the parenchyma itself by the presence of the sutures, possibly resulting at times in pulmonary emboli and chronic changes.

In addition to the parenchymatous sutures, Dr. McCosh, according to the suggestion of Dr. Morris, for the past year has been reflecting a large-sized strip of the fibrous capsule from the posterior kidney surface, leaving it attached at the convex border. This strip is then inserted into a split made in the quadratus lumborum muscle, and there sutured with chromic catgut sutures. Then the parenchymatous sutures are passed and tied. A gauze drain is inserted down to the kidney. Dr. McBurney, Dr. Briddon, and Dr. Eliot have used the following method: Same vertical incision as above, and kidney exposed and drawn out into wound. Fibrous capsule is split on its posterior surface, and two flaps of about the size of a fifty-cent piece raised up from the kidney substance. Each one of these flaps is then sutured to the deep edge of the lumbar incision with interrupted chromic gut sutures, which take in their grasp some portion of the muscles. A gauze drain is inserted down to the raw area of the kidney, followed by a careful closure of remainder of wound, so as to prevent the development of a subsequent hernia. No parenchymatous sutures are used.

After-treatment.—The patient should remain flat on her back without turning for three weeks. During this time she should make no muscular exertion whatsoever, as this might tend to disturb the adherence of the kidney to the lumbar wall. The gauze drain in the wound may be withdrawn little by little at each dressing, beginning about the fourth day, till the gauze is completely removed by the tenth day, or may be removed entirely at the end of twenty-four or thirty-six hours. The patient should be kept in bed for at least four weeks. It seems to me that it would be well to keep the foot of the bed elevated for two weeks after operation, so as to be doubly sure that the kidney is held in its proper position while adhesions are forming. After leaving her bed, she for six months should be cautioned against muscular labor involving lifting, etc., and it is possibly best to have the patient wear an abdominal supporter to keep the abdominal viscera in place.

Nephrectomy is to be done only in very exceptional cases, chiefly when the organ is diseased as well as movable. Extirpation has been done most frequently for hydronephrosis in a movable kidney. One must always be sure, before extirpating a kidney, that the opposite kidney is in a sound condition. Two cases which had had nephrorrhaphies without benefit so far as the cure of their symptoms went, had subsequent nephrectomies performed also, without any benefit.

Mortality of the Operation.—Of the 61 patients operated upon, two died as a direct result of the operation, or 3.2 per cent.—one, No. 48, died

four days after the operation, of septic peritonitis, revealed by autopsy; the second, No. 53, died on the 10th day post-operatively, very suddenly of pulmonary embolism, although there was no autopsy to confirm this diagnosis. This latter patient had been doing well, with no unfavorable symptom—no temperature nor apparent infection. Urine showed heavy trace of albumin. On the 10th day, without premonition, she became cyanosed and dyspneic, and died in twenty minutes. This mortality will surely in the future become smaller than the above figures, which are about double more than they should be, since the death from septic peritonitis was exceptional and should have been avoided. There are not sufficient dangers in the operation itself to prevent our recommending it to patients who really stand in need of it.

Results as to Relief of Symptoms after Operation.—The cases reported upon were all those who have ever been operated upon for movable kidney in the hospital, a period of time extending from May, 1888, to April, 1901; none reported upon have had the operation performed later than six months ago. Of the 61 cases, two died in the hospital as the result of the operation, leaving 59 to consider. One other died two months after the operation, of rapid phthisis, which leaves 58. Of these 58 patients, 42 have been able to be reached personally or by letters, and in many cases personally examined or a report of examination by their physician has been sent. Of these 42 cases, 22, or 52.3 per cent., have said that they were cured of the symptoms dependent on the movable kidney, while 15, or 35.7 per cent., have reported that they were benefited, eight of these greatly benefited, seven only slightly, while five or 10.9 per cent., have not been improved at all by the operation.

It has been well said that statistics may be made to prove anything but facts, so that I refrain from drawing too strong conclusions from these few cases. It is unfortunate that it has been only so recently recognized that the other abdominal viscera may be associated with movable kidney, consequently the older histories do not contain any reference to the condition and position of the other abdominal viscera; hence we are unable to tell how many of our cases were associated with more or less general enteroptosis. Of the later histories, five are noted as having a general enteroptosis. One of these had a double nephropexy at the Presbyterian Hospital, but with slight relief of symptoms. The other complications mentioned in the records are the following: Gastric indigestion nearly heads the list and affected 25 patients, constipation was complained of by 28 patients, nine had had attacks of appendicitis, and the appendices were removed in all nine at the time of the nephropexy. Three were subjects of attacks of diarrhea, one of attacks of jaundice, 11 patients were suffering from pronounced neurasthenia, one patient had had all her life attacks of chorea, two patients had markedly retroflexed uteri, two had badly lacerated

perineal, one a slight prolapsus uteri, two were very anemic, one very gouty, two had chronic nephritis, one patient had a movable kidney from which a stone was removed at the time of the nephropexy, one had a suppurative pyelitis, two had herniæ, both being right-sided femoral.

Of the five patients who had general enteropneumosis, or Glénard's disease, two were only slightly benefited, another greatly improved by the nephropexy, one of the former had a double nephropexy; two were entirely cured of subjective symptoms; of the four patients with double nephropexies, two were entirely cured, while two were not heard from; of the 11 neurasthenics, five say they were cured of kidney symptoms as the result directly following the operation, one was not in the slightest degree benefited, two were greatly benefited, while two were only slightly benefited.

Results as to improvement in symptoms of the nine cases with coincident appendicitis cannot be given, as two died shortly following the operation, three patients cannot now be found, while, of the four remaining, three were cured, the other being much improved.

The choreic patient is improved, but not cured.

One case who had retroflexed uterus has been cured, one other has not been heard from, one case with lacerated perineum was cured, one other not heard from, while the patient with prolapsus uteri was cured of her abdominal symptoms. One patient suffered from excruciating dysmenorrhea causing her to be in bed for two days. Between periods there was also more or less soreness in right ovary. The kidney before operation was found in right iliac fossa. Operation entirely relieved the dysmenorrhea, and periods are now passed without any pain. One patient with chronic nephritis was cured of her abdominal pains, but died 15 months later of the organic trouble. The other patient (operation two years ago) is still living; was improved by operation, but not cured of her pain, nor did the urine clear up. The patient with movable kidney from whose kidney a calculus was removed at operation has been entirely cured of all symptoms, *i. e.*, pain.

Twenty-three cases, or 34.4 per cent. of the whole 61 cases, had complications with their movable kidneys, exclusive of gastro-enteric symptoms. Ten of these, or 43.4 per cent., were cured of symptoms. Nineteen cases, or 31.1 per cent. of the whole number, were uncomplicated, and of these, 12 cases, or 63.1 per cent., were cured.

Improvement was seen in many of the cases only months after the operation. In general, we may say that the cures are most frequent in those cases where pain is the only or chief symptom complained of, unless the diagnosis be wrong; the operation is less successful in relieving gastro-intestinal symptoms, and least satisfactory in nervous disorders.

Results as to Permanency of the Fixation.—Thirty-six of the 42 patients have been examined within the past two months. Out of this number,

movability of the kidney has recurred in six cases, or 16.6 per cent.

Two cases had nephrectomies subsequent to the nephrorrhaphies on account of persistent severe pain, this, too, notwithstanding the fact that the fixation had been permanent. The subsequent operations caused no diminution in the symptoms, nor any benefit.

The urine after almost all the nephrorrhaphies has shown, very nearly invariably, marked temporary disturbances, such as the appearance of albumin in amounts varying from one to ten per cent., numerous casts, and in many instances blood-cells.

Results of Operation.—Out of 42 cases able to be followed, 22, or 52.3 per cent., were cured of subjective symptoms; 15, or 35.7 per cent., were benefited; five, or 10.9 per cent., received no benefit whatsoever.

Uncomplicated: 19 cases, or 31.1 per cent. of the whole 61. Of these, 12, or 63.1 per cent., were cured. Complicated: 23 cases, or 34.4 per cent. of the whole 61. Of these, 10, or 43.4 per cent., were cured.

Recurrence occurred in six cases out of 36 examined, 16.6 per cent.

Mortality of operation: two cases in 61 operations, or 3.2 per cent.

Comparison of Methods of Operation.—(See Description of Operations.)

Parenchymatous sutures used in 27 cases.

13 patients, or 48.1 per cent.	cured
10 " " 37 "	improved
2 " " 7 "	no benefit
2 died, " 7 "	

Recurrence, 4 out of 23 examined, or 17.3 per cent.

No parenchymatous sutures used in 17 cases.

9 patients, or 52.9 per cent.	cured
5 " " 29.4 "	improved
3 " " 17.6 "	no benefit

No mortality.

Recurrence, 2 out of 13 examined, or 15.4 per cent.

Statistics of Other Operators.—Keen: 134 cases, 63, or 47 per cent., were cured; 21 improved; 19 failed; mortality, 2.98 per cent.

Frank: 39 cases, with 21 cures, or 53.7 per cent.

Sulzer and Reinboth: 93 nephrorrhaphies; cured, 55.9 per cent.; improved, 9.7 per cent.; recurrence in 15.1 per cent; no success in 16.1 per cent.; death in 3.2 per cent. from operation.

Albarran: 64 per cent. successful; 14 per cent. partially successful; 22 per cent. failures.

Neumann: 65.3 per cent. successful; 10.3 per cent. partially successful; 22.07 per cent. failures.

P. Wagner: 51 per cent. lasting and complete cures; 15 per cent. partially successful; 20 per cent. failures.

Küster: 85 cases, 58.8 per cent. cured; 4 affected were men, none of whom was cured; 81 were women. Uncomplicated, 34, or 41.9 per cent. Of these 29 were cured, or 85.2 per cent. Complicated, 47, or 58.1 per cent. Of these, 21 were cured, or 44.6 per cent. Mortality: two deaths from pulmonary emboli, or 2.3 per cent.

Résumé—Presbyterian Hospital Statistics of Movable Kidney.—Total, 61 cases: 2 occurred in

men; 59, or 96.7 per cent., in women; 38, or 64.4 per cent., were married women; 21, or 35.6 per cent., were single women. Of the married women, 22, or 37.2 per cent. of the whole 59, had borne children. Average number of children to each, two.

Right kidney movable in 53 cases, or 86.8 per cent. Left kidney movable in 4 cases, or 6.6 per cent. Both kidneys movable in four cases, or 6.6 per cent. Average age was $33\frac{1}{3}$ years; youngest, 17; oldest, 65 years. Trauma antecedent in only seven cases, or 11.4 per cent.

Complications.—Femoral hernia in two. Gastro-intestinal indigestion in 25. Marked constipation in 28; diarrhœa in three. Jaundice in one. Chronic appendicitis in nine. Urinary symptoms in 18. Renal colic in seven. Renal calculus in one. Pyelitis in one. Chronic nephritis in two. Neurasthenia in 11. General enteroptosis in three. Uterine abnormalities in five.

Results of Operation.—Forty-two cases followed after operation showed 22, or 52.3 per cent., cured of subjective symptoms. Fifteen, or 35.7 per cent., benefited; five, or 10.9 per cent., no benefit.

Uncomplicated: Nineteen cases, or 31.1 per cent., of the whole 61. Of these 12, or 63.1 per cent., were cured.

Complicated: Twenty-three cases, or 34.4 per cent. of the whole 61. Of these, 10, or 43.4 per cent., were cured.

Recurrence occurred in six cases out of 36 examined, or 16.6 per cent.

Mortality of operation: Two cases in 61 operations, or 3.2 per cent.

30 East 53rd Street.

THE NERVOUS MANIFESTATIONS OF MOVABLE KIDNEY.*

BY A. L. BENEDICT, A.M., M.D.,
OF BUFFALO.

SEVERAL series of observations on the frequency of movable kidney are now available. The first series reported here consists of 57 ward patients at the Buffalo Hospital of the Sisters of Charity, suffering with various ailments. Of 23 males none had movable kidneys, though about half were convalescent from typhoid when the tissues are relaxed. Of 34 females five had a movable right kidney. Two of the first degree and one of the second occurred in middle-aged multiparæ who had never lost weight suddenly. Of these three two were uncomplicated with other abdominal ptoses, one (of the second degree) had an atonic dilatation of the stomach which reached to the umbilical equator. The fourth case occurred in a girl of thirteen years, with chronic pleurisy. The fifth case occurred in a single woman twenty-six years old, who had lost weight from 170 to 140 pounds. Neither of these presented complications in the abdomen.

Of 200 males examined in private practice 17 had first degree right kidneys, and of the 17, four

had also the same lesion of the left side, in the same degree. None had ever been fleshy, except one man who had lost from 187 to 157 pounds, and had gained again to about 165. In only one other had any notable decrease of weight occurred, namely, from 153 to 137. Six of the 17 presented marked nervous manifestations.

—, aged twenty-one years; no other organic lesion; venereal and nicotine excess; was referred on account of subclavian bruit which had been diagnosed as aneurysmal but which seemed to me merely functional. Several other patients, not mentioned in detail, presented similar throbbing in various vessels, flashes of heat, flushing and similar vasculo-paretic symptoms.

—, aged sixteen years, was an overgrown and sexually precocious boy over six feet in height. I imagine that such cases will ultimately be connected with pituitary disease. He had an atonic, gastric dilation with catarrh and stagnation, which was cured. He was morbidly egoistic and his mental condition grew worse till he developed acute mania. After his discharge from the asylum he contracted syphilis and is again insane, perhaps, this time, on account of cerebral syphilis. He had a double inguinal hernia and presented a proportionate eosinophilia of about 6 per cent., which I have found rather characteristic of nervous states bordering on insanity, and which has, I believe, been found by some observers in a notable percentage of asylum inmates.

—, aged forty years, was a seventh-month child, always under-sized, puny and nervous. The liver was small, though perhaps not sclerotic, and the stomach reached from the seventh rib to one and one-half inches below the umbilicus. Regarding the nomenclature, I would urge that the term gastroptosis be limited to conditions in which both curvatures of the stomach are low and I regard any stomach which reaches to the seventh rib as normal in this regard. The greater curvature is normally at least three-fourths of an inch above the umbilical equator, drawn tangent to the upper edge of the umbilicus. Sagging of the greater curvature alone indicates dilation distinguished as atonic and that due to obstruction at the pylorus.

—, aged twenty-eight years; epilepsy from first dentition; suspicion of head injury and possibly signal symptom in left latissimus dorsi. Marked indicanuria and temporary achylia, probably due to bromide depression. In spite of his drawbacks this patient was a very successful business man. Two other cases were also very nervous, but they had hepatic sclerosis and one also chronic colitis. Neither presented any other dislocation of viscera.

It may be said here that I do not regard the nervous condition as a result of the first degree kidney lesion alone, but would rather suggest that the causal relation was reversed. At any rate I am not trying to ascribe all the psychic ills and nervous depression that flesh is heir to, to mov-

* Presented to the American Gastro-enterological Association, in Washington, May 1, 1902.

able kidneys, but simply to present actual findings.

Of 169 females examined 65 presented movable kidneys and two others depressed and palpable but fixed right kidney. A number of others had right kidneys that could be oscillated a trifle but scarcely enough to be considered movable, even in the first degree, or to produce symptoms. These cases were divided naturally into two groups, 35 cases in nulliparæ, none of whom were or had been distinctly fat and all but five of whom were of slight build; and thirty-two cases in multiparæ, including the two cases of fixed but depressed right kidney, and two patients who had recently borne one child each and who had probably had the renal condition of nulliparæ.

Of the 35 nulliparæ 23 were single and there was no reason to suspect pregnancy in any. Among the married women only one early miscarriage was reported and five gave a pretty distinct history of sterility, in spite of the absence of precautions. There are two common types of women with movable kidney; one infantile, delicate, of feeble resistance and suggesting that their vague nervous symptoms are due to actual lack of space for the important nutritive organs. Four cases had lost somewhat in weight, but scarcely to a sufficient degree to explain the looseness of the kidney; two had gradually gained weight. In only two cases was there gastroptosis, associated in each instance with a second degree right kidney, and in one case with a first degree left kidney also. In the one the stomach reached from the seventh space to one-fourth inch above the equator; in the other from the eighth rib to the equator but rising after a few days' treatment with antiseptics to the seventh rib and a parallel one-fourth inch above the equator. All of these cases were nervous in a general sense and complained of back-ache, dragging in the loins, etc. The following six presented marked nervous symptoms:

Miss ———, aged twenty-eight years; prematurely gray; of morbid and retiring disposition; had a third degree right kidney. She was apparently very anemic but the red cells measured 42 per cent. There was a slight multiformenuclear leucocytosis probably due to ulceration around carious teeth, which she had neglected from dread of operation. She was most happily situated financially and socially and was engaged to be married to a gentleman of whom she was very fond. Although she was assured that the only essential trouble was the movable kidney, and in spite of favorable progress, she committed suicide. She had shown no indications of genuine insanity.

Miss ———, aged thirty-one years, had a second degree right kidney and a typhlitis persisting for several years after removal of the appendix. She had had insomnia for two or three weeks and had been profoundly impressed with the newspaper notices of the preceding case, and suspected her true condition and feared suicide.

Miss ———, aged forty years, gave a history

of protracted nervous dyspepsia and had been much blamed by her family for not recovering her mental and physical tone. She had a second degree right kidney; her stomach extended from the seventh rib to the equator and the pelvic organs were reported low by a gynecologist who was disposed to consider the abdominal features as insignificant. She was in a terribly morbid state so that I feared suicide, and though she had come to Buffalo expressly for diagnosis and treatment, she had not the energy to adopt either the operative or palliative measures offered. She has remained in about the same condition for two years.

Miss ———, aged thirty-four years, but appearing much younger, has a second degree kidney on each side. Her appendix is palpable and she has a chronic typhlitis. Her nervous state is weak rather than morbid, and she is making some improvement while wearing a bandage and having appropriate treatment of the bowel.

Mrs. ——— and Mrs. ———, physicians' wives, aged about thirty-five years, had respectively third and second degree right kidneys. The former had had her appendix removed two years previously. She gave a distinct history of a strain followed by the giving way of something in the right side and, almost immediately afterward, I found her kidney loose. This is the only case in which I have been able to recognize a definite traumatic cause, though most patients, especially those of the working classes, will give a history of heavy lifting. Both patients were extremely nervous and irritable; the former often violently hysterical, and they also had the usual local nervous symptoms. Both are now considerably relieved, the former by radical operation; the latter by a bandage. By the way, this list of twelve married nulliparæ includes five physicians' wives, while the following list of parous women includes three more, and there are two or three others of whom I have no accurate data.

The 32 parous women include only one to whom dangerous nervous symptoms can be ascribed. This patient had a mild atonic gastric dilation and cardiac dilation with aortic direct and mitral regurgitant, not due to rheumatism or any other known cause, including other infections. She has been insane for several months, the insanity gradually developing as in the case of the young man.

These 32 parous women were of various builds. Eight had lost weight notably, but one had gained again without relieving the condition of the kidney, while two others had only first degree mobility. One of the later cases and an additional one had emaciated on account of cancer. Fourteen cases showed moderate atonic dilation; five true gastroptosis; two obstructive dilation due to pyloric cancer; one a marked degree of atonic dilation, simultaneously with uterine cancer which was effectually removed, the patient having now survived three years. In another case the stomach was high enough but vertical. In three others

there was enteroptosis or, at least, sagging and protuberant abdomen, but the gastric area was normal. In one of the cases of mild, atonic dilation, Dr. C. D. Aaron had previously diagnosed and cured a gastropotosis.

One patient, aged thirty-one years, the mother of two or three children, had a second degree right kidney and a typhlo-colitis. After wearing a bandage and having appropriate internal treatment for a few months, she was cured, the kidney being almost absolutely firm. In other cases, functional relief followed the wearing of a bandage, even when the kidney remained as movable as before; and the relief sometimes has persisted after discarding the bandage, the nerve endings apparently being enabled to overcome their sensitiveness and to acquire a tolerance of further mechanic insults, as in the case of external bruised parts, like the perineum of horsemen and wheelmen. All of these cases, though not mentioned as presenting dangerous nervous symptoms, were considered to be hysteric, neurasthenic, etc., and all but a few had definite functional dyspepsias of one form or another; the remainder had organic lesions or, as in a few instances, were referred simply on account of a suspected kidney lesion. None of the cases here reported had evidence of true nephritis. On the other hand, I know of no nervous symptom that may not also be found in patients without movable kidney and the same may be said of etiologic factors commonly connected with movable kidney, including the predisposing causes of bodily conformation.

Of the 65 cases, 25 had movability of the first degree only, but six of the 25 were affected on both sides. None of these presented nervous symptoms of any great severity, though often troublesome enough to the patient and her family. The remaining 38 cases, excluding the two in which the kidney had become spontaneously fixed or had been congenitally displaced, included one of insanity; one of suicide; two of contemplated suicide; at least two in which the family relations were seriously threatened by the nervous trouble; two of gastric ulcer with its typic nervous state; one of hyperkinesis gastrica; one of general failure of secretory function and other indications which had led to the tentative diagnosis of Addison's disease; six not already counted, in which the diagnosis of nervous prostration or some equivalent term had been assigned and without other adequate explanation. Excepting a few of the men and a few women of the working class, all of the 82 cases emphasized their nervous condition. It is also perhaps significant that so large a percentage as $8\frac{1}{2}$ in men and 38.4 in women, should be met with in digestive practice.

It is noteworthy that in only one of the 82 cases was the term general splanchnoptosis applicable and, even here, the liver was only slightly prolapsed; the left kidney was firm and the stomach was really not prolapsed as a whole but only relaxed. Of course, if we call every case of flabby belly enteroptosis, and every case of sagging of the greater curvature of the stomach gastropotosis,

it is obvious that these two very common conditions will be added to a considerable percentage of cases of nephroptosis. Taking the whole series of 84, including the two of fixed kidney, the right kidney alone was involved in 65, the left alone in four, and both in 15.

THE MODERN TREATMENT OF THE MORE COMMON TRAUMATIC INJURIES OF THE EYE.*

BY CHARLES J. KIPP, M.D.,
OF NEWARK, NEW JERSEY.

In all cases of suspected injury to the eyeball it is advisable to secure cleanliness of the skin of the lids and the surrounding parts before we proceed to examine the eye. It is a well-known fact that in the free edges of the lids and the eyelashes numerous pathogenic micro-organisms are to be found at all times, and it is necessary, therefore to remove, them as much as possible, especially if a wound is suspected, in order to prevent septic infection. This is best accomplished by rubbing the free edges of the lids with bunches of absorbent cotton or sterile gauze wet with a solution of 1 per cent. of carbonate of sodium, till all loose epidermis is removed, and to finish with a solution of bichloride of mercury, 1 in 1,000, applied in the same way. If the lashes are long, it is best to cut them short with scissors. The skin of the lids, if this is grimy, should be cleansed with sulphuric ether, then with carbonate of sodium solution, and last with alcohol. In all cases of injury to the cornea a very careful search should be made for disease of the lacrimal sac, as the secretion contained in the sac contains the pneumococcus in great quantity, which, if brought in contact with the wound of the cornea, is pretty sure to infect it and cause extensive ulceration, which may lead to loss of vision and probably to total destruction of the eyeball from panophthalmitis. If the sac is pressed upon firmly in cases of blennorrhoea of the sac, purulent secretion will escape either from the lower or upper punctum. In such cases steps must be taken at once to cure or at least to arrest the lacrimal disease. The lower or upper canaliculus should be slit with a knife made for that purpose or with scissors, and the wound must be kept open by passing a probe along its entire course at least once a day for several days. This opening will enable the pus to escape more freely when the sac is pressed upon. In most cases it will be found sufficient to empty the sac by pressure every two or three hours and to carefully wash the pus out of the conjunctival sac with sterile water or a weak solution of bichloride, 1 to 10,000. If the secretion is very profuse, the sac must be syringed out with salt water or a solution of bichloride, 1 to 1,000, or protargol, 20 per cent. Some surgeons think it best to split the sac itself and to pack it with gauze, at the same time dust-

* Read before the Somerset County (N. J.) Medical Society, April 24, 1902.

ing iodoform powder in the conjunctival sac. It is also well known that the conjunctival sac contains pathogenic micro-organisms at all times, and that we cannot kill them by antiseptics without at the same time doing serious injury to the eye. The best one can do is to reduce their number by mechanical means. Normal salt solution, or sterile water, or a solution of boric acid should be used for flushing the conjunctival sac, and the furrows cleaned as much as possible by passing wet sterile cotton through them.

To enable us to make a thorough examination of the eye and its appendages, as well as for the relief from the pain, local anesthetics are now used very freely. A 4 per cent. solution of cocaine or eucaïne and a 1 per cent. solution of holocaine are mostly used for this purpose. Whichever solution is used, it must be sterilized by boiling shortly before it is used. In many cases it will be necessary to apply the remedy four or five times, at intervals of a few minutes, before the irritability of the eye has sufficiently subsided to allow of a prolonged examination, and during this period the lids must be kept closed, as otherwise the cornea will become dry and patches of the epithelium will be thrown off. As to whether it is best to commence the instillation of the local anesthetic before or after the cleansing, will depend on circumstances. My rule is that if I can get the drops in the conjunctival sac without their coming in contact with the free edges of the lids and lashes, I do so at once; otherwise I delay the instillation till the lids have been cleansed. Except in children and very nervous persons, a general anesthetic is not necessary for a thorough examination of the eye in such cases. For the examination of the anterior half of the eye it is best to darken the room; a bright oil or gas lamp, preferably with an Argand burner, should be placed on a level with the eye to be examined, and about a foot and a half to the side and in front of it. A convex lens of two and one-half or three inches' focus, one and one-half to two inches in diameter, is held between the surgeon's forefinger and thumb, about two inches from the patient's eye, and the light is concentrated upon the cornea by slight movements of the examiner's hand; the cone of light can be passed over every part of the cornea and the iris. In most cases it is of advantage to examine the eye through a second lens of nine or 10 inches' focus and four inches in diameter, placed in front of it. An ordinary botanical loupe will answer the same purpose.

If the method here prescribed, called oblique, or focal, illumination cannot be resorted to, the patient should be placed with his face before a large window, but not be exposed to the direct rays of the sun, so that an image of the window is seen upon the cornea. By watching the image while the eye is moved in various directions, the slightest irregularity of the corneal surface can be discovered and wounds or foreign bodies be seen without much difficulty. If lenses are at hand, they may be employed with great advan-

tage in the manner described for oblique illumination by artificial light.

Blows on the eye from blunt instruments may result in mere contusion of the lids, the well-known black eye, in an abrasion of the corneal epithelium, rupture of the eyeball, ecchymosis of the ocular conjunctiva, hemorrhage into the anterior chamber, rupture of the iris, paralysis of the sphincter iridis, dislocation of the lens in the anterior chamber or vitreous chamber, partial dislocation of the pupil, rupture of the lens capsule, hemorrhage into the vitreous, rupture of the choroid, hemorrhage into the retina, and optic neuritis. If the injury involves the globe cocaine may be used to allay the pain, and if the iris shows signs of inflammation the pupil must be kept widely dilated by frequent instillations of atropine. Cold applications to the lids will be useful in most cases, and abstraction of blood from the temple will assist in subduing the inflammation. Injuries involving the crystalline lens, the deeper structures of the eye, and especially rupture of the eyeball with or without the escape of the lens and vitreous, should be treated by a general practitioner only if no ophthalmologist is available. Sympathetic iridochoroiditis is not very rarely seen after this injury, and enucleation is about the only remedy to prevent its occurrence in most cases.

Subconjunctival hemorrhage is most frequently the result of a slight blow. The bleeding may recur without apparent cause several times during the first days following the injury. It is of little importance in most cases, but an examination of the acuity of the vision should be made, as hemorrhage in the interior of the eye may have been produced at the same time and make the case a serious one. Absorption of the blood takes place quite rapidly, leaving some discoloration of the conjunctiva for a few days more. Applications of cold compresses to the lids are grateful to the patient and may expedite the removal of the blood.

Wounds of the ocular conjunctiva usually heal very quickly and require no other treatment than the frequent removal of the secretion from the conjunctival sac, but if they are very extensive a stitch or two with very fine silk will expedite the healing. Abrasions of the epithelium of the cornea are sometimes caused by a scratch with the fingernail, the edge of a piece of paper, the rebound of a twig of a shrub, the beards of grain, and so forth.

An injury of this kind occurring to an eye free from inflammation of the conjunctiva and from disease of the lacrimal sac ordinarily heals in a short time without leaving even a scar. All that needs to be done in such cases is to keep everything that can carry infection away from the eye, to instil a few drops of the cocaine solution every few hours, and to apply compresses wet with warm solution of boric acid to the lids for half an hour several times a day. The defect is usually permanently covered after a good night's rest. Occasionally we meet, however, with a

case in which, after a slight scratch of the cornea, the irritation continues for days, then subsides gradually with an apparently complete cure. But after a week, or perhaps a month, the eye again becomes painful and inflamed, the attack lasting from one to several days and ending as before in apparently complete recovery. Usually the pain is first felt on awaking in the morning, and it is supposed that it is caused by the conjunctiva of the lid having become during the night adherent to the loosened epithelium of the cornea at the original seat of the injury. I have known cases in which such attacks recurred many times. It seems most probable that in cases of this description the scratch extended somewhat deeper than the epithelial layer, and that the new-formed epithelium for some time merely bridges this spot and is now and then raised and loosened by serum collected beneath it. In these relapsing cases I have found the best treatment to be the complete removal of the loose epithelium by means of a sterile camel's hair brush or a cotton-tipped probe wet with a solution of boric acid, so that a sharply defined defect with regular edges remains. This must be repeated as long as the epithelium covering the wound is not as transparent as elsewhere. If the floor of the defect is found to be grayish in color after the removal of the epithelium, I touch the grayish portion with alcohol and repeat this application if necessary several days. In a few cases I have been obliged to resort to the galvanocautery to secure a permanent cure, but this should be avoided if possible, especially if the scratch was over the pupillary area. Some surgeons recommend bandaging of the eye for several days in this affection, but I have not had to resort to the bandaging since I have used the treatment above described.

All wounds of the cornea, even slight scratches, if produced by unclean implements or occurring to eyes in which disease of the conjunctiva or disease of the lacrimal passage is present at the time the injury is received, require special attention, as they often become the starting point of progressive ulcers or abscesses which may lead to great obstruction of the cornea. In all such cases the previously existing disease should be treated as already described. The conjunctival sac must be kept clean by frequent irrigation with a wash of boric acid or a weak solution of bichloride, 1 to 5,000. Sometimes I have used instead of the bichloride solution an ointment composed of bichloride of mercury, 1 part, to 1,000 parts of vaseline, and introduced a piece of the size of a pea into the conjunctival sac every four hours. Instillation of a solution of atropine and warm fomentation with boric acid solution I use in every case. If the treatment here outlined fails to arrest the progress of the ulcer, if the whole or a part of its margin assumes a yellowish-white color and a hypopyon makes its appearance (a hypopyon is a collection of purulent matter at the lower part of the anterior chamber, which changes its position or disappears on the patient's looking upward), very finely powdered iodoform

or xeroform should be dusted on the ulcer once or twice daily, and if this fails to stop the progress of the ulcer, the infiltrated portion must be destroyed by means of the galvanocautery. If the latter is not available, pure carbolic acid may be cautiously applied to the infiltrated margin by means of a very thin glass rod or a pointed stick of wood. Great care must be exercised to limit the application of the acid to the ulcer, and the conjunctival sac must be freely irrigated with sterile water for some time after the application. When the progress of the ulcer has been arrested, the warm fomentation and the cleansing must be continued till all symptoms of irritation have subsided. In some of these cases a violent iridocyclitis is produced by the action of the microbes, usually pneumococci, and intense pain in the head with a tendency to closure of the pupil is present. In such cases the atropine solution must be used more freely, and six leeches should be applied to the temple.

Foreign bodies, especially when sharp-pointed, on the inner surface of the lids, particularly when situated near the free margin, cause much pain by being carried over the cornea with every movement of the lid. To remove these foreign bodies the lid must be everted, which can be easily done by one who is accustomed to handling eyes, without any instruments, but for those not used to such work it is best to use a probe or anything like it in shape, and lay it transversely across the lid, not far from its free edge, and, by taking hold of the eyelashes while the patient looks down, raise the lid by the lashes. If the foreign body is not found here, search should be made for it in the cul-de-sac. This is done by lifting with a spatula or a broad probe the everted lid while the patient looks down as far as possible; or if the physician finds it difficult to do this, he should pass a cotton-tipped probe or a camel's-hair brush as high up as practicable, and pass it from one end to the other of the cul-de-sac. I have known so-called eye-stones, and even pieces of glass, to be lodged in the cul-de-sac for many months without their presence having been suspected by physicians. Another and still simpler way to remove foreign bodies on the conjunctival surface of the upper lid, is to pull the upper lid far down by the lashes and at the same time to push the lower lid up as far as possible under the upper lid, and then to let go the upper lid. In this way the lashes of the lower lid sweep it down. Foreign bodies, such as fragments of straw, the husks of seeds, the wings of insects, cinders, etc., when lodged on or in the ocular conjunctival do not as a rule produce much irritation, and may remain in this position for an indefinite time without doing harm. Their removal is easily accomplished, if situated on the conjunctiva, by lifting up an end by the point of a clean needle or a spud; a cotton-tipped probe will often answer the purpose. If situated in the conjunctiva or under this membrane their removal is much more difficult. The easiest way to get them out is to grasp with a

delicate forceps the foreign body and with it as little as possible of the conjunctiva over or around it, and snip this off with a pair of fine scissors. If necessary, the edges of the wound may be brought together by very fine silk thread. Grains of gunpowder never cause any irritation here, and need not be disturbed.

Foreign bodies in the conjunctival sac or in the cornea often produce an amount of pain, photophobia, and lacrimation which seems entirely out of proportion to the size of the body or the amount of injury sustained by the eye. The picture presented in such cases is so characteristic that anyone familiar with affections of the eye is enabled to make a correct diagnosis as soon as the patient enters his presence and before he has told his tale, or before the eye has been examined. In most cases the patient is aware that a foreign body has struck his eye, but in some, especially if the body has been blown against the eye by the wind, the patient does not suspect its presence, and attributes the condition of his eye to a sudden cold. In all cases in which the symptoms described arise suddenly and are confined to one eye, or are at least most marked in one, the presence of the foreign body should be suspected and a very careful search be made for it by the methods already described. If none is found on the inner surface of the lids, in the cul-de-sac, in or on the cornea, the punctum of the lower canaliculus should be inspected, as I have more than once found, especially soon after the patient's hair had been cut, a small stiff hair protruding from it and rub against the cornea with every movement of the lid.

Foreign bodies on the cornea are easily wiped away by a cotton-tipped probe wet with sterile water. If in the substance of the cornea, the foreign body must be dug out with a sharp spud or with a cataract needle, or if the body is oblong in shape and has entered the layer obliquely, like a splinter under the fingernail, it will be necessary to split the layer in front of the edge of the body nearest the surface, and then extract it with delicate forceps. If the body has extended so deeply that there is danger of pushing it into the anterior chamber in the attempt at extraction, a lance-shaped knife or a broad needle must be passed through the cornea into the anterior chamber, and its blade be pressed against the posterior surface of the cornea behind the foreign body while the latter is cut out. If the foreign body is of iron or steel and of sufficient size, it may be extracted sometimes, without cutting, by a powerful electro-magnet. After the removal of small fragments of iron or steel a brownish spot often remains, which is caused by the chemical combination of the iron with the albuminoid substance of the cornea. Some surgeons do not think it necessary to remove this, as it will be thrown off after a while, but so would also the foreign body if left there long enough. I remove both at once, and hence save the patient prolonged irritation and loss of wages from inability to work.

For the removal of a foreign body, the patient should be placed in a firm chair near a window, but in such a position that the image of the window does not fall on the cornea. An eye speculum may be used to keep the lids apart and the eye-ball steadied by a forceps. If the eye is under the influence of cocaine or holocaine, however, this will be found unnecessary in most cases. The surgeon, standing behind the patient, fixes his head against the surgeon's breast, the upper lid is raised with the forefinger of his left hand and the lower lid drawn down with the middle finger, and, holding the spud or needle as he would a pen, he inserts the instrument beneath the foreign body and lifts it out. If he is not ambidextrous, and the left eye is the one to be operated upon, the patient's head must rest against the breast of the assistant, and the surgeon stand in front of him. After the operation the surgeon should make it a rule to examine the eye by oblique illumination before he discharges the patient, and if any particles of the foreign body or the discoloration spoken of remains, he should continue to scrape away till all discoloration has been removed. The after-treatment is the same as that of corneal lacerations.

In the fall of the year, during chestnutting time, I have often seen cases in which a chestnut burr had fallen against the eye, and numerous prickly hairs of the burr were deeply embedded in the cornea. I have always removed them very carefully, and have never seen serious consequences follow the accident. The hairs of certain caterpillars, lodged in the ocular conjunctiva or cornea, have been known to produce, in addition to the common symptoms of foreign bodies, after a period of a month or more, small nodular swellings around them in both the ocular and the palpebral conjunctiva. The hairs are known to have penetrated the cornea and the iris, and to have set up violent inflammation of the uveal tract. The nodules in the conjunctiva are usually about the size of a millet seed, and consist of granulation tissue and giant cells. The hairs lodged in the conjunctiva and the surface of the cornea, as well as the nodules, must be excised, if possible, by fine forceps and scissors, and atropine and other mydriatics must be used to combat the iritis; and if the disease is localized in a part of the iris, it is best to excise this part when the inflammation of the iris has somewhat subsided.

Perforating wounds of the cornea, even when made by sharp and clean instruments, must always be regarded as a menace to the future usefulness of the eye unless made under aseptic conditions; and these are rarely present when accidents occur. If not complicated with injury to the deeper structure, or with prolapse of the iris, they should be treated simply by rest, cold applications to the lids and instillations of a mydriatic. A well-fitting occlusive bandage, made of elastic flannel, will in most cases materially assist in securing a speedy healing of the wound. If a small pro-

lapse of the iris is present and the injury a very recent one, and the prolapse is not covered by exudation, the prolapse should be cleaned by thorough irrigation with sterile normal salt solution and an attempt made to reduce it with spatula and probe. If successful, mydriatics should be instilled if the wound is in a central part, and myotics if in the periphery of the cornea. If not successful, it is best to abscise it close to the cornea, and if possible to leave no iris between the lips of the wound. The after-treatment is as for simple wounds of the cornea.

All large perforating wounds of the cornea and sclerotic, and especially those involving the ciliary body, are of an extremely grave nature, and their treatment had best be left to men experienced in such injuries. Rest in bed and cold applications to the lids are to be recommended in all cases till an ophthalmologist can see the case and decide on further treatment. Under aseptic treatment many such injuries are now healed and the form of the eye preserved, even if the vision is lost; but many of these, even after they have become perfectly quiet, and all symptoms of cyclitis have apparently subsided, may give rise to a destructive inflammation in the other eye, sympathetic ophthalmia, and it is a serious question whether it would not be better to enucleate eyes with such extensive injuries at once, rather than have the patient endure many months of pain, have a useless eye in the end, and be in constant danger of sympathetic ophthalmia.

Foreign bodies lodged in the interior of the eye can often be extracted without great injury to the eye, by experienced operators. If of iron or steel, they can often be removed through the wound of entrance by the powerful electric-magnet if they come under observation within a day or two after the injury; and such patients should be at once sent to a place where such a magnet is available. Unless removed, foreign bodies in the vitreous body, retina, or ciliary body usually give rise to severe inflammation, destroy vision, and not infrequently cause sympathetic ophthalmia. Occasionally such bodies become encysted, and the eye remains quiet till the capsule enclosing the body breaks. Foreign bodies in the lens usually cause cataract. They can be removed, if of iron, by the magnet if seen soon after the injury, or be extracted with the cataract later on. Foreign bodies in or on the iris can be removed without cutting out a piece of the iris in many cases, but in some this is not practicable.

Burns and scalds of the skin of the lids often result in extensive sloughing, and great deformity not infrequently follows the contraction of the resulting cicatrix. Other parts of the face are usually burned at the same time, and the treatment in no wise differs from that of the same injury to the integuments of other parts of the body.

The injury done to the conjunctiva and the cornea by the contact of boiling hot fluids, melted metal, red-hot iron, the explosion of gunpowder, dynamite, and other explosives, the touch of the

lighted end of a cigar, the ignited end of lucifer matches, is often very great, and not infrequently ends in blindness. In all cases of this nature our first thought should be to get rid of the agent producing the injury, if still present; and in order that a careful search be made, one must make free use of cocaine, eucaïne, or holocaine, in watery solution or combined with vaseline in the form of a salve. If the injury was caused by hot fluids, the presence of foreign bodies in the cornea or conjunctiva is not probable; nevertheless search for such should be made before other treatment is instituted. Melted metal, pitch, and other substances which are solid in their usual state generally remain at least a part in the cornea or in the conjunctival sac, and must be removed with the least injury to the part.

Occasionally the injury sustained from such accidents is much less than could be expected. Some time ago I was visited by a workman employed in the gas-works, who, while looking through a small opening in a gas-retort, was struck by some melted pitch, which, as he said, had caused the eye to be blind. I found the lids somewhat burned, a layer of pitch between the free edges of the lids, enveloping the lashes so thoroughly that I had to cut them close to the skin before I could liberate them; on opening the lids I found a very thin layer of pitch on the cornea, which came away without difficulty. His vision was normal and he had no further trouble whatever from the injury. On several occasions I have removed from the eye a perfect mould of lead of the surface of the globe, and found both the conjunctiva and the cornea uninjured. It is generally supposed that in such cases the moisture of the surface of the conjunctiva and cornea is converted into a layer of steam by the hot metal, which prevents injury to these parts. The metal forming the wound is usually lead, which cools rapidly.

In explosions of gunpowder, or other explosive substances used in mining and blasting, the cornea may be merely scorched and no other injury done, but most frequently the burn is complicated by grains of unexploded gunpowder, sand, fragments of stone or metal being driven by the force of the explosion into or through the cornea, and even through the lens into the vitreous chamber and retina. If foreign bodies are present in the cornea, sclerotic, or conjunctiva, they must be removed with a spud or needle, and the conjunctival sac must be irrigated with sterilized water till all that are loose have been removed from the conjunctival sac. Applications of cold to the lids, after first covering the skin, if this is burned, with cloths wet with an antiseptic solution, are generally grateful in the early stages, but should be continued only for a short period if the cornea is much injured. The conjunctival sac must be washed out frequently with a mild antiseptic solution of normal saline solution and atropine instilled if the cornea is involved. Cocaine and holocaine must be freely used, and best in combination with vaseline; and if the pain is

very great, leeches should be applied to the temple and morphine should be given in sufficient quantity to secure sleep. In the later stages warm applications to the lid will be found more grateful than cold ones, and a salve containing iodoform or sozoiodol substituted for that of cocaine. It has been the practice of some surgeons to tear up the adhesions which form between the opposing surfaces of the conjunctiva, if this has been burned, or between the cornea and the lid, and while this will sometimes succeed if the conjunction is burned only in patches, it is utterly useless and only gives the patient additional pain if the destruction extends to the cul-de-sac. Of all these means which have at various times been devised to prevent the formation of a total symblepharon in such cases, none have in my hands been of any use whatever. I have also tried to graft mucous membrane from the lips on the burned surface of the sclerotic, but the result has not been proportionate to the pains taken. In some cases I have succeeded in severing adhesion between the lids and the globe months after the injury was sustained.

The destruction produced in the skin of the lids and the conjunctiva and the cornea by contact with strong acids, caustic alkalies, and escharotics is very variable, and may consist of a mere whitening and exfoliation of the epithelium of the conjunctiva and the cornea or a partial or total necrosis of these structures. The amount of mischief done will depend, not only on the caustic nature of the agents, but also on the length of time of contact. The prognosis should be guarded even in what seem trifling injuries resulting from strong acids. Only recently I saw a man employed in an oil refinery, on whose face and eyes a quantity of crude sulphuric acid was thrown during an explosion. The skin of the face and of the lids was very badly burned, but his eyes, when examined by a physician shortly afterward, were apparently not seriously injured. He had no pain in his eyes and his vision, was not much impaired, according to his own statement. The burns of his face were treated in the usual way, and as he did not complain of his eyes nothing was done for them. A week later, on opening his eyes, he noticed that he could not see, and an examination made at this time showed the cornea of each eye to be very opaque. The case went on from bad to worse, and when I saw him, about two weeks after the accident, the cornea of each eye had sloughed, and the contents of the eyeballs had partly escaped. Lime, mortar, and other compounds of which it forms an ingredient, are very destructive to the eyes, and the lesions produced thereby do not differ essentially from those due to burns from molten metal. The surgeon but rarely sees injuries of this character till some time after the accident, when the agent, if it was a fluid, is no longer in the conjunctival sac, and all attempts to neutralize the fluid at this time are useless. The free use of sterilized water for irrigation of the conjunctival sac is serviceable in all cases, lime burns included, for the pur-

pose of washing out any foreign substance which may remain. The use of water in cases where lime or any of its compounds has come in contact with the eye, was till lately by some physicians regarded as harmful, as it was thought that it, by slaking the lime, caused a degree of temperature which was destructive to the tissue. Recent laboratory experiments have shown that this view is erroneous, and that water is far better for these cases than a solution of sugar, which forms a combination with lime having decidedly caustic properties. It is now known that the opacity of the cornea is the result of the chemical action of the lime, and may consist of the extraction of the corneal mucoid, the precipitation of sediments in the epithelium, in the glutin of the basic substances, and in the lymph. The rise of temperature and the abstraction of water attending the slaking of lime have little or nothing to do with the production of the opacity of the cornea.

In cases of lime burns the patient should be laid on the floor, the eyelids pulled apart as far as possible, and cold clean water be poured in a stream over the cornea and the conjunctiva. As soon as most of the lime or mortar appears to have been washed away, a solution of cocaine or holocaine should be instilled at intervals of a few minutes, till the pain has subsided, or if the spasm of the orbicularis is so strong that the lids cannot be pulled apart, a solution of cocaine should be injected at the outer canthus with a small blunt-pointed syringe; or if a salve containing the local anæsthetic is at hand, this may be injected in the same way, till the lids are distended. As soon as the eye can be opened, a careful search should be made for any remains of particles of the agent, not only on the cornea and the conjunctiva of the lid, but the cul-de-sac must be explored, as here they are often hidden, and if present must be wiped away with cotton wrapped on a roughened probe or a small stick, if they are loose, and with spud or forceps if fastened to the tissue. The subsequent treatment should be the same as that of burns from metal. All efforts to clear up the cornea after the inflammatory symptoms have subsided have not resulted in doing much good. Very lately a German physician professes to have found a remedy which will accomplish this. The remedy is the chloride of ammonium, which he uses in a 2 to 15 per cent. solution, and with this he bathes the eye for 15 minutes several times a day. I have not yet tried the remedy, but shall do so when opportunity offers.

In conclusion, let me say that, as traumatic injuries to the eye are not infrequently the cause of litigation for damages, it is of great importance that the surgeon into whose hands the case first falls should not only make a thorough examination of the injured eye, but also ascertain the exact condition of the non-injured at the time when the patient is first seen. His memory may not always be relied upon, and it is in the interest of all parties concerned that he should keep a complete record of the case from beginning to

end. If practicable, he should note the exact amount of vision in each eye when examined separately and all peculiarities he may observe in the non-injured eye, as defects in this eye may subsequently be attributed to the injury of the other eye.

SUCCESS IN PRACTICE.*

BY CHARLES E. NAMMACK, M.D.,

PROFESSOR OF CLINICAL MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE, NEW YORK.

TWENTY-ONE years ago I had the honor of delivering an address to my classmates of the Bellevue Hospital Medical College who, like you, had enjoyed the privilege of clinical study in the wards of the adjacent vast hospital.

The intervening years have brought about marked changes in the methods of medical education. Then the didactic lecture was the chief instrument for imparting instruction, and after listening to the same lectures by the same men for two or three consecutive winters, and supplementing the lectures by a reasonable amount of reading, the average student could pass his final examination, receive his diploma—which was also a license to practise—and go forth to practise upon an unsuspecting public. It was seriously asserted that a man could graduate without having seen a case. It was said that success in practice rested upon a tripod, made up of a sign board, a carriage, and plenty of assurance. No state examination bugbear confronted the recent fledgling. He was free to go and blow, where he listeth. His ideas of the pathology of disease were as yet untrammelled by the swaddling clothes of the then infant science of bacteriology.

The dawn of Laveran's discovery was just beginning to shimmer over the horizon and to dispel the mists of the idea that malaria was caused by bad air. The humble mosquito, while admittedly and perniciously active, had not yet risen to the dignity of a winged messenger and bearer of pathogenic germs.

The great white plague was thought to fall only upon those who had been injudicious in the selection of their ancestors, because the brilliancy of Koch's finding of the rod-shaped bacillus had not yet diffused itself through the accumulated ignorance of centuries.

Yet the men who were turned out to practise in those days have ever since filled useful and honorable positions in the community, and although their scientific training could not compare with yours of to-day, their practical equipment has been sufficient to carry them and their patients through the dangers and difficulties of life.

The teachers of the olden time, hampered as they were by lack of laboratories, special hospitals and financial endowments, must have been great men to obtain the results which they did. The liberality which has secured for you this magnificent building with its dissecting rooms, laboratories, recitation rooms and palatial out-

patient clinic was an unknown quantity then. And the times have also changed. Perhaps the pleasantest way to study the manners of a period is by its contemporary fiction. If you take down a novel of 40 years ago, say by Bulwer-Lytton, or Disraeli, or even dear Jane Austen, what do you find? A picture of an old English country house, a long library with walls bearing oil paintings of distinguished men and women in court dress, and at the library table a pallid young man whose aristocratic features suggest the firm lines of those counterfeit presentments which hang around him, etc., etc. Then will follow pleasant descriptions of the placid life and conversation of perfectly self-possessed English gentlemen who never could, by any possibility, forget themselves for a single moment. This was the kind of meat on which our fathers fed. Placidity, contentment and inaction!

Take one of the popular books of to-day. We have our Hugh Wynnes, and our Richard Carvels, and our Prisoners of Zenda, and our Gentlemen of France, and a whole host of dashing, slashing, crashing fellows who apparently never can, for a single moment, think of themselves at all. They represent the "Zeitgeist," the spirit of to-day, the spirit of doing things, and while doing them, doing them with all your mind and all your heart and all your strength. And you of Cornell University, you represent an institution which does things. You will soon become a part of a graduate body which is doing things. Go forth ye, and do your share!

Let us borrow another illustration from the field of contemporary literature. Take that meteoric figure which a few years ago flashed across the sky of letters with such vividness that critics prophesied that the falling stick of a burned rocket would soon be heard. But, to the confusion of his enemies, the clear light of his genius still burns as a guiding star and warms the pulses of patriotic men and women everywhere. What can you learn from his life? A young man in a government office in India, his ambition was to write. He did not try to achieve it by dawdling around the boudoirs and the clubs, nor did he crook the pregnant hinges of the knee where thrift might follow fawning, but he went first among the lowly for his studies of life, and his spare moments in the barrack room resulted in the creation of the jovial Mulvaney and his riotous chums. He cultivated the society of the up-country traders for the legends of the jungle, and Mowgli and his brothers sprang into life. He followed the army on the march, as he is following it to-day, that he might see for himself the awful ravages of camp dysentery and typhoid, and the still more deplorable havoc of governmental mal-administration.

Where will you find such photographic fidelity of observation, where such graphic accuracy of description? (I am not forgetting that optic nerve in *The Light That Failed*, which he placed outside the frontal bone. Even Homer sometimes nods.)

* Address delivered before the Cornell University Medical Club.

This is the lesson I wish you to draw from his work. Do not stand idly waiting all the day long for the wealthy patient who cometh not until you are weary, weary, or perhaps until you are dead, but take up your work among the hundreds of thousands of your fellow men and women who are daily and nightly, grimly and perspiringly, but magnificently and courageously, fighting the battle of life. Take it up among the tenements even though you must rub against filth, vice and ignorance. Take it up in the camp, even though you must follow the flag through pestilential torrid swamps and fight the dangers of the camp latrine. Take it up between the decks of the liners and in the stokeholes, even though your hands be soiled with smudge. Take it up in the pest-house, where a woman graduate of this college remained with a patient whom all others had deserted, while an admiring nation marvelled at her courage and devotion to duty.

And wherever you take it up, take with it the knowledge that Cornell men and women before you have set a standard of work which must be yours to uphold and uplift.

And remember that you must take with you into practice many things which are not in the pharmacopeia. It is a good thing to know when and how to dispense opium, quinine and strychnine. Your faculty can teach you that. Would that we could also teach you how to dispense hope to the despairing, courage to the wavering, cheer to the faltering, consolation to the suffering, and to bring with you the glorious sunshine of out-doors to the shut-ins of the sick-room! Balzac has written that "the sick man's horizon is at the foot of his bed." Let your patients be something more than pathological specimens in your eyes. You must help the husband to guard from his wife's anxious eyes that which his love wishes to spare her while he may. You must strengthen the mother's courage and devotion to an erring and wayward child. You must be the friend of the youth, that he may not be ashamed to tell you of habits that require correction. You must know what doubtful credits or shaky speculations are causing the tremor of the business man's hands. You must be the center of the strongest emotions of which the family life is capable. Strange burdens will be laid upon your shoulders, and you will have acknowledged rights greater than those of relatives, friends or even spiritual advisers. But every right has a corresponding duty, and the duties imposed upon you in return for your rights are tenderness, humanity, honesty, wisdom and delicacy. In return, these should inspire your patients with gratitude, respect and confidence. But gratitude will often take the form of an unpaid bill; respect will give place to forgetfulness; confidence will melt away under the assumptions of ignorance and empiricism.

Still, to one who has a steady hand on the helm, a course marked out, a point to be reached, these are minor discouragements. Mists, though irradiated with gold, are illusive; we want to see

our destined end clear-cut and strong, a thing real and positive standing before us, before we have any good hope of success. What though the rock of disappointment does loom up in the course? Disappointment is not failure. Against the elastic vitality of youth it should be as a call for endurance, as a summons to heroic endeavor, as a command to elevating energy. Even failure is not criminal. Despondency is the only sin. You may remember the description of Dr. William MacLure that Jamie Soutar gave: "It was nichty tae see him come intae the hoose, neeburs; the verra look o' him was victory."

And you remember the victory over death that he and Sir George made. Sir George, the eminent specialist, whom he drove through the flood to save the life of poor Annie Mitchell. And the tubbing which he gave Saunders to reduce his fever, the success of which caused even the minister "in his goon and bans" to break into cheers on a Scotch Sabbath. And his own last journey, when he said "A ken as weel as onybody that a' wasna sae dainty and fine mannered as the town doctors. But if the new doctor be a young laddie and no verra rich, ye micht let him hae the buiks and instruments; it ill aye be a help."

It may not be given to you, or to me, to live a life so close to the hearts of our patients, but let us strive to live so that when we enter a house we enter as friend as well as physician. Be true to your sacred trust; be firm in defense of the right; be diligent in pursuit of Truth; be hopeful ever. Do not be discouraged by the pessimistic philosophy of the day which teaches that this world is only a big coral for us to try out teeth on, a proving ground, a hotbed from which we shall presently be transplanted according to our several deserts; and that since we are powerless to change the existing order of things, we should be content to drift with the tide. In the language of Victor Hugo, so long as the three questions of the age, the degradation of man by poverty, the ruin of woman by starvation, and the dwarfing of childhood by physical and spiritual night, are not solved; or, in other words, so long as ignorance and misery remain upon the earth, just so long must every man and every woman resolve to live a life that shall not be useless. Go ye forth, then, and do your share!

At your right hand may walk the shadow of disappointment; at your left hand, may stalk the specter of temptation; all around you, at times, may fall the awful pall of human despair. But, amid these darkening shadows, strive to walk uprightly, strive to walk manfully, strive to walk God-fearingly, and, at the last, you will emerge into that eternal light which is reflected from the face of God himself.

Vermont Tuberculosis Conference.—Much interest was manifested throughout the State of Vermont in a tuberculosis conference, the opening session of which was held at Burlington September 29. The conference discussed the subject of tuberculosis in Vermont, and the perfection of an organization for study and prevention of the malady.

STERILITY IN THE FEMALE AND ITS CURABILITY.

BY S. L. KISTLER, M.D.,
OF LOS ANGELES, CALIFORNIA.

THE slight attention paid to this subject is possibly due to lack of information as to value of treatment, and partly because of disinclination for the burdens of maternity. In this paper I shall avoid prolixity, as the subject is one which admits of great extension. Therefore, I shall of necessity treat the subject in a casual way. The conditions may be either acquired or congenital, and in taking the matter up I will consider the term "Sterility" or "Barrenness" to apply to women, who, under favorable circumstances, fail to procreate. I might be more exact, but to do so would only confuse, and my excuse for presenting this paper is to call attention to a subject of much importance to all practitioners, as it is fast becoming more and more widespread; and it behooves the doctor to use his best efforts to remedy the defect when called upon.

The causes of sterility may be enumerated as follows: (1.) I believe that many causes of this condition, as well as of uterine disease in general, are the result of loss of sympathetic nerve force, the effect of disease, or injury arising from sexual demands. (2.) An indefinite number of cases are undoubtedly the result of imperfect participation of the uterus in the sexual orgasm, and the consequent lessened respiratory action of the uterus. (3.) Inactive ovaries. (4.) Inactive condition of uterine mucosa. (5.) Congenital deficiencies, anomalies of the hymen and malformation of the congenital tract. (6.) Arrested development of ovaries and tubes. (7.) Excessive acid reaction of secretion of vaginal mucus membrane and catarrhal changes in the mucus membrane of the uterus and tubes. (8.) Vaginismus; neurasthenia; exhaustion; physical decadence; nymphomania. (9.) Amenorrhea; dysmenorrhea; narrow internal and external os. (10.) Flexions; versions. (11.) Laceration of cervix; profuse leucorrhea; endometritis. (12.) Gonorrhea, especially with involvement of adnexa. (13.) Constitutional diseases and conditions. (14.) Neoplasms; myomas; malignant growths; hypertrophy. (15.) Ingestion of certain articles of diet and medicines. (16.) Obesity. (17.) Incompatibility. (18.) Higher education.

Treatment.—When a case applies for treatment for sterility, we must bear in mind the fact that all cases are imputable to women. Indeed, "Dr. Vedder, who carefully examined 300 married women and their husbands who were childless, proved in effect that 70 per cent. of his particular cases were due to the man, either directly in consequence of functional impotence or absence of spermatozoa, or indirectly by infection of the woman by gonococci. In 30 per cent. of his cases the cause was due to the woman and most generally owing to neoplasms or atrophy of the uterus." Regarding the above quotation, I will say, that I believe the reverse holds true in

this part of the country. Therefore, if treatment either indicated or tentative does not yield results within a reasonable time, we should proceed to investigate the husband's condition before we carry treatment further. It behooves us to search diligently till we find the cause, and, if found incurable, the patient may be so informed, but I would advise all to be cautious on this point, as our patient may, on the other hand, become *enciente*, much to our chagrin and discomfiture. So, as before noted, search diligently for the cause. Get as complete a history of case as possible, for many factors may enter in, and heredity may cut a wide swath in helping us to arrive at a conclusion; and the poet who said "Every man is an omnibus in which ride all his ancestors," may have spoken concerning the very case you have in hand. Slight or minor diseases of the ovaries or tubes are said to cause the condition under consideration more often than more severe troubles, and this because of the intricate and difficult adjustment of the pavilion of tubes to ovaries, which relationship may be set aside by the most trivial vice of structure or disease. Arrest of development or disease of ovaries seldom cause sterility, as both are rarely diseased at the same time. Likewise many women conceive readily in whom orgasm is deficient or absent.

General treatment embraces remedies from borax down to Key-Tsi-Ching, a famous Japanese remedy, and on down to *Lawsonia Inermis*, a celebrated Arabian cure. Probably our most beneficial remedies are belladonna, the auric salts and electricity, combined with such local treatment as is indicated. Tone up the nervous system and prohibit frequent coitus. Tone up uterine mucosa, for conception may occur and the result be blighted early if condition of mucosa is unfavorable.

For inactive ovaries and atrophy, we have valuable aids in electricity, protonuclein, ovarine, thyroids, sabal serrulata, ignatia and such other agents as are indicated and tend to develop and bring to maturity. In congenital deficiencies, anomalies of hymen and malformation of tract, the help of the surgeon must be had when he will, if possible, remedy the condition. Likewise we must call the surgeon in cases of laceration, neoplasms, and malignant growths; and, if thought necessary, in cases presenting myomas. However, it is supposed that they very seldom cause the condition. Excessive acid reaction of vaginal secretion may be often corrected by use of suitable alkaline douches, and further treatment will consist in toning up the mucous membrane. Catarrhal conditions of not too severe type may be treated by applying solutions of arg. cit. or iodized phenol, and in cases presenting marked hurt in endometrium the above is profitably used before applying the curette. Of course all malposition must be corrected as soon as possible. Graily Hewett reports thirty cases dependent upon flexions and versions cured by remedying the abnormality. Vaginismus, neurasthenia, exhaustion, physical decadence, nymphoma-

niae, and all neuroses appearing demand careful investigation in order that the source of trouble may be discovered, and if possible remedied amenorrhoea; menorrhagia.

Since the days of Marion Sims we have been taught that the chief reason for sterility, attributable to the woman, is narrowness or flexions of the uterine canal. But when it is remembered that the narrowest pin hole os will admit a sound larger than the self-propelling spermatozoid, it will be seen that this reasoning is scarcely satisfactory, and it is doubtless due to operative furor that the popularity of the stenosis and atresia theory of sterility continues. Since the time of Sims and Simpson, practically no form of treatment has been employed save some method for opening or enlarging the canal, a procedure which not only has been, as a rule, ineffective, but has been followed by morbidity and mortality, especially when slitting the cervix has been done. Being satisfied with the effect of electric currents and accepting the evidence offered, we believe that we have in it a treatment far and away in advance of any other means known at the present time; and Sims' assertion that sterility can only be cured by surgical interference is untenable—rather use medication that raises the nutrition of the entire organism. "And now we are told to feed or starve the woman according as we wish male or female progeny.

Constitutional diseases and conditions call for such treatment as their respective types indicate.

In case of very large vagina, recourse may be had to artificial fecundation. Avoid use of articles containing tannin, also forego use of antiseptics. In case of absence of ovaries: "Knauer has reported successful pregnancy following transplantation of ovarian tissue."

Obesity produces sterility by mechanical pressure and by excess of fat in the blood and thus causes amenorrhoea, and ripening and bursting of graffian follicle is thus prevented. The treatment is obvious. Always bear in mind that such cases may be the result of senile decay.

If gonorrhoea has sealed up the ends of tubes, their restoration *ad integrum* is scarcely possible. However, as a *dernier resort* an explorative incision will show if the condition be possibly remediable.

A noted American gynecologist has said: "He never knew a woman to bear a child after having had gonorrhoea." This statement none of us believe.

Finally in the treatment of sterility, we should bear in mind the fact that each case is a law unto itself, and we should study it as though it were the only case, remembering the great number of cases dependent upon slight causes.

Conclusions.

- (1.) The great majority of cases of sterility are dependent upon slight causes.
- (2.) The greater number of cases are curable.

(3.) Many apparently hopeless cases are curable.

(4.) Length of time a case has persisted is no bar to treatment, providing organic change has not obtained which precludes possibility of cure.

(5.) Treatment used must always depend upon the case in hand.

A CASE OF CHRONIC LYMPHATIC LEUCEMIA ACCOMPANIED BY LYMPHOSARCOMA, OR MYELOMA, OF THE STERNUM AND RIBS.

BY CHARLES F. CRAIG, M.D.,

CONTRACT SURGEON, U. S. ARMY; PATHOLOGIST AND BACTERIOLOGIST TO THE U. S. ARMY GENERAL HOSPITAL, PRESIDIO OF SAN FRANCISCO, CAL., ETC.

THE following case of chronic leucemia of the lymphatic variety, accompanied by diffuse lymphosarcoma, or myeloma, of the sternum and ribs, is of interest in many ways, and has been thought worthy of being put on record. For the clinical data of the case I am indebted to Dr. Edmund Barry, U.S.A., who first suspected the nature of the disease.

Clinical History:—O.E., Private, Co. "G," 14th Infantry. Patient was admitted to this hospital September 18, 1901, from U.S. Army Transport Meade, with a diagnosis of anemia due to chronic diarrhea.

Family History:—Negative.

Personal History:—Negative to the time of his enlistment in the army. He arrived in the Philippines in March, 1899, and in April of that year he had several attacks of diarrhea. The ailment continued at intervals for a period of nine months and returned while he was on the transport en route to the United States. His illness began with cramp-like pains in the abdomen, and was accompanied by frequent bowel movements, the discharges containing mucous but no blood.

Patient's condition on admission was very poor. He was somewhat emaciated and there was great muscular weakness. He presented a markedly anemic appearance, the skin being of a waxy color and the mucous membranes pale and bloodless. Tongue slightly coated, very pale and flabby. Appetite almost nil.

Physical Signs:—Heart rapid in action but otherwise negative. *Lungs*:—There was marked tenderness over the sternum on percussion, and increased dulness over the entire chest. Breath-sounds very much muffled, as were also the sounds of the heart. *Abdomen*:—There was marked tenderness over the colon, and the spleen was found greatly enlarged and very tender. There was considerable glandular enlargement, the submaxillary glands especially being noticeably larger than normal, and upon careful examination the post-cervical maxillary and inguinal glands, as well as the deeper glands of the upper and lower extremities, were found enlarged.

Dr. Barry, who had charge of the case, diagnosed it as a case of probable leucemia. The ten-

* By permission of the Surgeon-General, U. S. Army.

derness over the sternum increased from day to day and was very noticeable.

On September 19, 1901, a blood examination was requested by Dr. Barry, but it showed nothing abnormal beyond a slight leucocytosis.

On October 15 a blood examination was again requested, and I found a great increase in the white cells, nearly all of which were small lymphocytes. At this time the ratio of white to red cells was one to 12.

On October 20 the white cells were found to be still further increased, the ratio being, white to red, one to four. The increase in white cells was composed almost entirely of small lymphocytes. Repeated examinations of the blood were made, and the increase in lymphocytes was constant until death.

On October 22 there was a marked dyspnea, which gradually increased, the patient dying at 4:45 P.M., October 24, 1901. The temperature for the 24 hours before death was 105° F. in the axilla, pulse running from 140 to 160.

From the clinical history of the case and the type of lymphocytes found, it is probable that the disease originated shortly after the patient's arrival in the Philippine islands, and was diagnosed there as chronic diarrhea.

Examination of the Blood:—The examination of the blood in this case showed it to be typical of the chronic form of lymphatic leucemia. The increase in white cells was confined almost entirely to the small lymphocytes. In the fresh specimen these appeared as they do in normal blood, but in the stained specimens it was noticed that there seemed to be considerable degenerated almost black color. These granules were irregular in size and shape and were found only in showing a large amount of glandular material which stained, with Ehrlich's triacid mixture, an almost black color. These granules were irregular in size and shape and were found only in the nucleus.

One of the most interesting facts about the blood examination was that at the first examination but a very slight leucocytosis was observed, not enough to attract my attention. This agrees with the observations of several authorities, who have shown that at intervals in cases of leucemia the leucocytosis seems to disappear, reappearing shortly.

The greatest number of lymphocytes found at any one time was 336,000 to the cubic mm., which occurred shortly before death. At this time the red cells numbered 1,352,000. At the first examination in which the increase of lymphocytes was noticed, October 15, the red cells numbered 1,912,000, the white cells 152,000 per cubic mm. From this time to the time of death there was a gradual decrease in the number of red cells and an increase in the leucocytes.

The ratio of the polymorphonuclear leucocytes to the small leucocytes was, as a rule, about one to 1,200; the ratio of the eosinophiles to the small lymphocytes about one in 2,200. The ratio of large lymphocytes to small was not accurately established, but it must have been very low, as

many stained preparations showed only one or two large lymphocytes in the entire specimen.

Autopsy, Microscopical:—Body appeared to be that of a man about 24 years of age. *Rigor mortis* medium. The skin presented a peculiar, dimly yellow, waxlike appearance. There was slight *postmortem* discoloration over the dependent portions of the body and over the lower portion of the abdomen. Finger-nails were not congested. There was a general glandular enlargement of both the superficial and deep glands. The abdomen and chest were distended, and there was considerable general edema present. The pupils were slightly dilated and equal. The mucous membranes were almost colorless.

Thoracic and Abdominal Cavities:—Subcutaneous fat and muscular tissue were fairly well preserved, but the muscles were very pale in color. Covering the sternum and ribs, and lying between them, on both sides of the chest, was a large amount of newly formed material resembling cartilage in appearance, being yellowish-white in color, in some places evidently well supplied with blood-vessels. This material had obliterated the ribs and sternum; that is, their outline could not be distinguished. This material cut very easily, and upon removing the sternum and cartilages of the ribs in order to open the chest cavity, it was found that this newly formed material had covered the pericardium, and projected in small, nodular-like masses upon the pleural side of the ribs and sternum. Both pleural cavities contained fluid, and the pleura was adherent to the chest-wall in places. The liver reached about three cm. below the border of the last rib. The omentum reached to the bladder, and contained a small amount of pale fat. The stomach and intestines were dilated with gas and were very pale in appearance. The mesenteric glands were considerably enlarged, some reaching the size of a small filbert. The abdominal cavity contained a small amount of clear yellow fluid. The appendix lay upon the brim of the pelvis, was not coiled upon itself, and appeared normal. The bladder contained a small amount of urine. The suprarenal glands appeared normal, save for extreme anemia. The right ureter was dilated near the pelvis of the kidney. Upon section of the abdominal aorta it appeared much blood-stained, but there was no evidence of sclerosis.

Liver:—The liver measured $24\frac{1}{2} \times 22$ cm. It was of a very light reddish-yellow color externally. The capsule was smooth, the gall bladder partially filled with bile, which was of a pale lemon color. Upon section of the liver the cut surface appeared a light brownish-red in color. The organ was very anemic. The cut surface showed large numbers of small capillary hemorrhages scattered throughout the tissue. The organ was not bile-stained. Consistence greatly decreased. The small amount of blood that flowed from the cut surface was very light in color and thin. Weight of the organ, 2,310 grams.

Pancreas:—The pancreas measured 15×6 cm. The organ was very pale externally. Con-

sistence slightly increased. Upon section the cut surface was very slightly congested and appeared very fibrous. The weight of the organ was 120 grams.

Spleen:—The spleen measured $18 \times 10\frac{1}{2}$ cm. It was of a dark reddish-pink color externally. The capsule was considerably thickened and slightly wrinkled. There were minute capillary hemorrhages visible beneath the capsule. The splenic notches were obliterated. Upon section of the organ the cut surface was bright red in color and the organ evidently greatly congested. Numerous areas were present which appeared hemorrhagic. The Malpighian corpuscles were very distinct and appeared to be enlarged. The consistence of the organ was increased slightly. Weight, 430 grams.

Left Kidney:—The left kidney measured 14×6 . It was very pale in color externally. The capsule was smooth. Upon section of the organ the cut surface was found to be very anemic, and there were small areas of congestion present. The cortex and pyramids were indistinct. The pyramids were almost white in color. The cortex was somewhat increased in thickness. There was no fat at the base of the pyramids. The mucous membrane of the pelvis was not congested. The capsule was not adherent, and the stripped surface showed numerous small hemorrhagic areas. Weight of the organ, 250 grams.

Right Kidney:—The right kidney measured 14×7 cm. It was very pale in color externally. The capsule was smooth. Numerous minute hemorrhagic areas were visible beneath the capsule. No cysts present. Upon section of the organ the cut surface was very pale in color, and there were a few small areas of congestion present. The cortex and pyramids were rather indistinct. The pyramids were very pale in color, almost white. There was no fat at their base. The cortex was increased in thickness, and the mucous membrane of the pelvis slightly congested. The capsule was not adherent. Upon stripping the capsule a few hemorrhagic areas were found. Weight, 230 grams.

Heart:—The pericardium lying beneath the sternum was covered with the new growth, which extended to the pleura on either side. The peribronchial glands were very greatly enlarged. The pericardium was thickened, the new growth evidently having infiltrated the tissue. The pericardial cavity contained about the normal amount of fluid. The apex of the heart was formed by the left ventricle. The amount of extracardial fat was about normal. The extracardial vessels were slightly congested. Upon section of the left heart, the left ventricle was found to contain a small clot. The muscular wall was normal in thickness, but very pale in color. The mitral leaflets were slightly thickened. The aortic leaflets appeared normal. Upon section of the right heart the muscular wall was about normal in thickness, but very anemic. The chambers were free from clots. The tricuspid and pulmonary valves were normal. Weight, 325 grams.

Lungs:—Both pleural cavities were filled with

fluid. The left lung was adherent to the chest-wall by numerous very old adhesions. The organ was crepitant throughout and normal. The right lung was also adherent to the chest-wall by old adhesions, but upon examination was found to be otherwise normal.

Intestinal Canal:—Save for the extreme degree of anemia present, the intestinal canal appeared normal.

Bones:—Section was made through the tibia and through the ribs, and the bone-marrow was found to be not very much altered in appearance. It was of a dark reddish color, and appeared to be slightly more fluid than normal.

Anatomical Diagnosis:—Chronic lymphatic leucemia; acute parenchymatous nephritis; pleurisy with effusion.

Microscopical Examinations.—**Liver:**—Sections of the liver showed a diffuse distribution of small lymphocytes throughout the capillaries of the organ, especially numerous in the portal spaces. In a few instances the excessive collection of lymphocytes in the portal spaces had led to the formation of lymphomas. These were never very numerous, however, the portal spaces as a rule simply showing a great accumulation of lymphocytes. The interlobular capillaries of some of the lobules showed but few lymphocytes, while in others the capillaries were crowded with them. They were all of the small variety, and took the stain very deeply. The larger blood-vessels were in places greatly crowded with small lymphocytes. The liver-cells, as a rule, showed marked albuminoid degeneration, the protoplasm appearing cloudy and the nucleus staining rather poorly. There was considerable pigment present in the protoplasm of the liver-cells in the form of very fine dark brown granules. The connective tissue of the liver was not increased in amount.

Spleen:—The splenic sinuses were crowded with deeply stained leucocytes, nearly all being small lymphocytes. The Malpighian corpuscles were greatly enlarged and composed entirely of small lymphocytes, in a few places the enlargement being so great that the condition was in reality a lymphoma. The organ was not pigmented, nor was the connective tissue perceptibly increased in amount. The lymphocytes in the spleen stained well, but the nucleus of many of them showed the same collections of irregular blackish pigment which were noticeable in the stained blood specimens. The most interesting feature in the sections of the spleen was the replacement of almost all the splenic cells by the small lymphocytes. These cells were almost the only ones present in the sections. The blood-vessels contained but few red corpuscles.

Kidney:—The most characteristic conditions found in the kidney were collections of small lymphocytes lying within the intertubular capillaries, but especially within the Malpighian tufts. Many of the Malpighian tufts were apparently almost replaced by an immense collection of small lymphocytes, forming minute lymphomas. The lymphocytes in this organ stained as in other sections and were of the same variety. There was a well-

marked acute nephritis present, as was evidenced by the swollen and distorted condition of the epithelium lining the tubules, and the presence within the tubules of epithelial, hyaline and granular casts.

Lymphatic Glands:—Sections of the enlarged lymphatic glands showed simply an enormous collection of small lymphocytes, the entire glandular tissue being composed of them. As a rule, the normal structure of the gland was lost.

Description of the Tumor:—As has been stated, a diffuse new growth had infiltrated the sternum and ribs, extending posteriorly almost to the vertebral column. This new growth had so obliterated the divisions between the ribs and sternum as to leave but little trace of the original anatomical relationship. The color of the new growth was a yellowish-white, streaked with pale pink areas, where the blood supply was evidently more abundant. Upon section of the growth in various places, it was found to cut rather easily with an ordinary cartilage knife, and a section through the ribs or sternum showed, in many places, no trace of the original bony formation, the entire bone seeming to have been replaced by the new growth. This was so even in the thickest portions of the sternum. The process had evidently originated in the marrow of the bones and had infiltrated the surrounding bony structure, destroying it and extending from rib to rib, firmly uniting all the ribs and obliterating their structure. Sections were cut and stained from various portions of the growth, including the portions lying between the ribs and also through the rib substance. All the sections were carefully studied, and but little difference was noted in those portions of the growth which lay between the ribs and those portions involving the bone itself, save that in the latter here and there could be seen evidence of the histological elements of the bone. The sections of the tumor showed a delicate fibrillated reticulum enclosing in its meshes numerous cells, large numbers of which resembled in every way small lymphocytes. In portions of the sections taken through the new growth involving the bony structure of the ribs and sternum, small detached areas could be seen presenting the normal histological structure of the bone. These were, however, rather rare, showing that the new growth had entirely replaced the original structure. The histological structure of the tumor is best described simply as a reticulated connective tissue framework enclosing large blood spaces and numerous cells resembling the small lymphocytes. This structure was found to be the same through all portions of the tumor which were sectioned.

Conclusion:—From the clinical history and *postmortem* findings of the case just described, it will be at once seen that it is a case of chronic lymphatic leucemia, complicated by diffuse lymphatic infiltration of the sternum and ribs. This latter condition has been described by various authors under various names. The oldest designation of this variety of tumor is lymphosar-

coma. This term has been used for a long period of time and has been generally accepted by a large number of investigators. Other names applied to the condition are angiosarcoma and lymphadema ossium, the latter being the name applied to the condition by Nothnagel. In an important paper upon the subject Weber calls the condition a general lymphadenomatosis of the bone. Other authorities, such as Klebs, Hektoen, Herrick and Ellenger, have given the name of myeloma to growths having the structure of the one described. From a study of the structure, either of the names, lymphosarcoma or myeloma, are good ones to apply to the peculiar growth which has been described. The name lymphosarcoma has the advantage of being the older term, and at the same time drawing attention to the malignant nature of the process. There can be no doubt that the condition is one of malignancy, as shown by the rapid and extensive growth involving and destroying the bone tissues. Its seat of origin is no doubt in the bone marrow, from which place it gradually infiltrates, softens and replaces the bone. In the case described, the excessive tenderness over the sternum, that is, over the new growth, was very marked, the least touch causing the patient to wince with pain. This may be of some value from a diagnostic standpoint in similar cases. The process consists essentially in an invasion of the bony tissues by the small lymphocytes, but at the present time nothing is known as to the exact etiology of the process.

MEDICAL PROGRESS.

PHYSIOLOGY.

Destiny of Adenin in the Body.—It is generally taught that the nuclear substance adenin, when fed to animals, is deposited in the kidneys as uric acid. But A. NICOLAÏER (*Zeitsch. klin. Med.*, vol. 45, Nos. 5 and 6) has shown that the crystals are in reality not uric acid, but aminodioxypurin, which is closely allied to it. Both substances burn without melting, their barium salt is almost insoluble; excess of dilute alkali dissolves them, and their alkali salts are precipitated by strong alkalies; they are both soluble with difficulty in ammonia with the aid of heat; the murexide reaction is positive, and their silver salts form an amorphous precipitate, which is blackened by warming with silver nitrate. Important points of difference, however, are: Aminodioxypurin contains 41.9 per cent. of nitrogen, is soluble in 20 parts of 10 per cent. boiling hydrochloric acid, and in dilute hot sulphuric acid, while uric acid has only 33.3 per cent. nitrogen and is less easily soluble in the two acids mentioned. Besides, the form of crystals may vary. That aminodioxypurin may occasionally be present in human urine is possible; it could not, however, be detected in a large amount of normal urine analyzed, nor in uratic calculi.

Cocaine as a Thermogenic.—The temperature raising action of cocaine is one of its most characteristic properties, and, while no clinical significance has been attached to it, it is nevertheless of interest in the pharmacodynamic and physiological aspects. In determining the source of this production it is to be noted that the increase of heat production is closely associated with motor excitement; therefore, the first step is to elim-

inate this factor, if possible without involving the others. With this in view a series of experiments were made by REICHERT (Phil. Med. Jour., August 2, 1902) in which the action of cocaine was observed on curarized and morphinized dogs, also on dogs after section of the spinal cord at its junction with the bulb, and on others after section of the crura cerebri and injury to the caudate nuclei. This research has demonstrated the following facts: (1) That the rise of temperature caused by cocaine is due to an increase of heat production, and that the latter depends on two actions—one upon the cortex, causing motor excitement, and the other upon the caudate thermogenic center, by which heat is produced independently of motor activity; (2) that cocaine possesses very little power in lightly curarized animals, both because of the motor quietude and of the depression of some other portion of the thermogenic apparatus; (3) that cocaine is absolutely without thermogenic power in animals in which the pathways of thermogenic and corticospinal motor fibres have been cut, as after section of the spinal cord at its junction with the bulb and of crura cerebri; (4) that cocaine is effective as a thermogenic when only a small portion of the caudate center is left intact with the parts below; (5) that cocaine and morphine are direct antagonists in their actions upon the caudate and cortical centers which are directly or indirectly involved in the changes of temperature and of heat production.

Physiology of the Fasting State.—Through animal experimentation, A. G. BARBÈRA (Bul. Soc. Med. Bologna, vol. II, No. 1, 1902) has sought to determine the influence of inanition upon the secretory excitability of the chorda tympani, cervical sympathetic, and vagus, and upon the secretory activity of the cells of the submaxillary gland, stomach, and pancreas; the practical point in view being a knowledge of the conditions obtaining in starvation, for the better management of cases in which, through mental or other disease, there exists a state of inanition. The following findings are noted: (1) The secretory fibers for the submaxillary gland contained in the chorda tympani retain their electrical excitability almost until the death of the starving animal, and the secreting cells of the gland partially retain their function, while electrical stimulation of this nerve causes marked increase in the quantity of saliva, though not as much as in the normal state of nutrition; (2) excitation of the cervical sympathetic does not promote salivary secretion; (3) subcutaneous injection of pilocarpin causes increased secretion of saliva, which diminishes or ceases after a subsequent injection of atropin, curare injected into the veins increasing this secretion; (4) electrical excitation of the chorda tympani after injection of pilocarpin causes additional increase of saliva, but such excitation fails to promote the secretion after it has been arrested through injection of atropin; (5) if the nerve be intact a piece of blotting-paper, dipped in acetic acid and placed in contact with the buccal or lingual mucosa, causes a copious flow of aqueous, limpid saliva; (6) the saliva obtained by all these methods shows, through chemical tests, absence of sulphocyanate of potash and, through artificial digestion, absence of the diastasic ferment, both of these being believed to be absent in the saliva of the dog under normal conditions, and the dog having been used in these experiments; (7) the fibers of the vagus which excite gastric secretion, as well as the intrastomachal nerve-ganglia which preside directly over gastric secretion, and the secreting cells all preserve, almost to the end of the starving animal's life, electric excitability and secreting power—the latter qualitatively but not quantitatively—and the small amount of gastric juice thus obtained contains a minute

quantity of free hydrochloric acid and pepsin, as shown by its power, within restricted limits, to change egg-albumin into peptone; (8) curare injected into the veins induces secretion of gastric juice which has the same characteristics and properties as that obtained by excitation of the vagus; (9) in starving animals electrical secretory excitation of the pancreatic fibers of the vagus is not abolished, neither is that of the intrapancreatic nerve-ganglia which preside directly over the pancreatic secretion; (10) the secretory capacity of the pancreatic cells is retained and the reciprocal connection between these three elements is uninterrupted. Curare injected into the veins causes secretion of pancreatic juice. The pancreatic juice obtained by these various methods possesses to a limited degree the power to transform albumin into peptone and starch into glucose.

Physiological Action of Extracts of Nervous, Muscular and Other Animal Tissues.—It was shown by Osborne and Vincent that extracts of nervous tissues, when injected into animals, cause a fall in blood-pressure. This is not due to the presence of cholin, which produces a rise in blood-pressure. Although Halliburton claimed that both cholin and extracts of nervous tissues occasion a rise in blood-pressure, the results of S. VINCENT and W. SHEEN (Jour. Phys., July 21, 1902) agree with those of the former investigators. Whereas, before the administration of atropin both cholin and nervous-tissue extracts produce a fall of blood-pressure, after its administration in large doses cholin produces a marked rise, while nervous-tissue extracts produce a marked fall. This depressor substance can be extracted with alcohol. It is also found in muscular tissues, whether striped, cardiac, or unstriped. Its power is not so marked as in the case of nervous tissues, but is exerted after doses of atropin sufficient to completely abolish vagus action. This depressor substance is contained in extracts made with boiling normal salt solution as well as in alcoholic extracts. Extracts of testis, kidney, spleen, pancreas, gastric and intestinal mucosa, lung and mammary gland all produce a fall of blood-pressure. Certain tissue extracts, as that of the kidney, give complex results, the explanation of which the authors are not prepared to enter upon. The suprarenal glands and the infundibular portion of the pituitary body appear to be the only animal tissues which yield a pressor substance. The latter also contains a depressor substance of the same nature as that contained in nervous tissues generally.

Metabolism in the Nervous Centers.—Very little is known about the exchanges of tissue that occur in the ganglion cells of the central nervous system. There can be little doubt that these exchanges are amenable to the same laws that govern metabolism in other tissues. Thus, H. VON BAEYER (Zeitsch. all. Phys., vol. 1, No. 3) found that in cold-blooded animals there occurs in the cold a storing-up of oxygen in the ganglion cells greater than that which occurs when the temperature is warm. This storage of oxygen occurs in particular reservoirs. The transportation of oxygen from the reservoirs to the site of its consumption is hindered by cold and promoted by warmth. In the condition of strychnine tetanus nerve-impulses have a frequency less when the temperature is cold than when it is warm.

Metabolism and Diet.—In a series of experiments on the effect of forced feeding on the metabolism of normal individuals, F. W. GOODE, N. D. BARSWELL and J. E. CHAPMAN (Jour. Phys., July 21, 1902) found uniformly bad effects. The subjects experimented upon reached a condition of complete failure of appetite, they complained of a feeling of weight and distension in the abdomen; some of them suffered considerably from hemorrhoids due to the large quantity

of blood in the portal circulation, and most of them experienced colicky pains and suffered from mucous colitis. In one case there was considerable disturbance of sleep, a great deal of dyspnea on exertion, while exercise caused well-marked pain in the hepatic region. The authors summarize the results of forced feeding as follows: A very small quantity of nitrogen is retained in the tissues, except when the forced feeding is extreme; the subjects pass an increased quantity of urine, of very high specific gravity, more or less proportional to the increased intake of fluids, contrary to what has been observed in pathological conditions; there is a marked increase in the total nitrogen in the urine, the proportion of this as urea remaining normal all through; there is no marked difference in the proportion of uric acid and ammonia; the inorganic constituents are markedly increased; there was no marked increase in the total quantity of nitrogen in the feces, contrary to what was to be expected; there is a temporary increase in the rate of absorption of nitrogen in forced feeding, as against the tendency to a diminution in the rate of absorption of fats during the same period; there is a rapid increase in weight during a period of forced feeding, which as rapidly decreases when the forced feeding is discontinued. In general, there is a marked deterioration of health.

Some New Properties of Urea.—The presence of urea up to saturation, according to W. RAMSDEN (*Jour. Phys.*, July 21, 1902), prevents the coagulation by heat of all proteid solutions examined. Globulins, caseinogen, acid- and alkali-albuminate, fibrin, even heat-coagulated proteid, swell up and dissolve in a saturated solution of pure urea. Dry gelatin is dissolved until 40 per cent. is in solution. The presence of urea facilitates the formation of acid- and alkali-albumin. It has a marked accelerating effect upon the digestion of fibrin by pepsin-HCl, or by trypsin. A saturated solution of urea is a valuable histological reagent; by its action on the connective tissues it greatly facilitates the separation of a tissue into its individual elements. Ammonium cyanate and thiocyanate produce many of the effects of urea. The effects of urea upon proteids are of two kinds; first, those of a substance that renders them more prone to zymolysis, and their conversion into acid- or alkali-albuminate; secondly, they are protective, since coagulable proteids are not heat-coagulated in its presence, but reacquire this coagulability when the urea is withdrawn by dialysis.

Pancreatic Digestion and the Spleen.—Extracts of the spleen prepared when this organ is congested during the period of digestion increase the proteolytic power of the pancreas, according to L. B. MENDEL and L. P. RETTGER (*Am. Jour. Phys.*, August 1, 1902). Injections of defibrinated blood from the splenic vein are also effective. On the other hand, boiled extracts of the spleen are ineffective. Extracts of other tissues (liver, pancreas) appear to have little action. This is true also of pure saline infusions. The precipitate produced by the addition of alcohol to active splenic extracts contains a trypsinogenic substance. The extracts of the pancreas of splenectomized dogs are not always free from trypsin. The transformation of the pancreatic zymogen into trypsin is facilitated in two ways; first, by an intrapancreatic process facilitated by the spleen (Herzen); secondly, by an extrapancreatic process facilitated by the intestinal secretion.

A New Method of Determining the Action of Pepsin.—By determining the viscosity in the viscometer of solutions of albumins undergoing digestion, E. I. SPARCO (*Zeitsch. phys. Chem.*, vol. 35, No. 6) has found a new method of investigating the action of ferments. He states that the viscosity of a solution of

coagulable albumin gradually diminishes during the process. The same is observed in the absence of pepsin, with hydrochloric acid alone, though to a less marked degree. If the variations in viscosity are illustrated by means of a curve, this is first steep and finally more level, until the largest part of coagulable proteid is so changed as no longer to be coagulable, when the viscosity remains constant. Specimens of the same proteid solution, treated with different amounts of pepsin, with the same degree of viscosity contained the same amount of altered and unaltered albuminates. The curves obtained represent a mathematical formula, showing that the relations are constant.

The Role of the Nucleus in Oxidative Processes.—Many experimental studies have tended to prove that the nucleus exerts a directive control over cellular activities. According to R. S. LILLIE (*Am. Jour. Phys.*, August 1, 1902), there is conclusive evidence that in many tissues the nucleus is the chief agency in the intracellular activation of oxygen; and furthermore, that the active or atomic oxygen is in general most abundantly freed at the surface of contact between nucleus and cytoplasm. If this relation of the nucleus to oxidation is a constant characteristic of the cellular organization—as seems probable—the inference is clear that the oxidative activities of organs must be largely a function of their extent of nuclear surface. The same conclusion applies to the synthetic processes in so far as they are dependent upon oxidation. The distribution and arrangement of the nuclei, quite apart from their number and united surface-area, may also be of great importance in relation to the physiological activity of the organ. The intense oxidative activity of the intestinal mucosa is conditioned in large part upon the columnar arrangement of the epithelial cells.

The Influence of Altitude on the Composition of the Blood.—That high altitudes have a favorable effect on quality and number of the red blood-cells is the result of the observations of E. ABERHALDEN (*Zeitsch. Biol.*, vol. LXIII, No. 2). In going from lower to higher altitudes the number of red blood-cells increases; likewise in descending from a higher to a lower altitude the number of red blood-cells diminishes. The same rule applies to the quantity of hemoglobin. The increase takes place immediately and remains constant during the entire stay at the higher altitude, but the decrease accompanying descent takes place gradually, until after four to six days a constant number is reached. The hemoglobin and the red blood-cells rise and fall in the same degree.

The Innervation of the Urinary Passages.—The knowledge of the nervous mechanism of the bladder is complicated by the fact that, like all other viscera containing smooth muscle, this organ is supplied with two sets of nerve fibers; namely, sympathetic and sacral nerves. These have been held to be antagonistic in function, but it is the opinion of C. H. FAGGE (*Jour. Phys.*, July 21, 1902) that the difference between these two sets of nerves is morphological rather than physiological. This author studied the mechanism of the evacuation of the bladder and found that when all the vesical nerves are divided micturition can only be effected by a rise of pressure within the bladder sufficient to overcome the resistance at the neck, there being no evidence of a diminution of this resistance by the direct agency of nerves. It is evident that whenever the sphincter mechanism is called into play by stimulation of the hypogastric nerves the urethra contracts along its whole length. The whole urethra is a sphincter mechanism of the bladder, though from a mechanical standpoint the section of urethra nearest the bladder must always be of the greatest importance for the mere

retention of urine. The author believes that the resistance to the outflow of urine at the neck of the bladder is largely due to tonic contraction of the circular fibers of the urethra at this point, whether any special ring of tissue be present or not. The effect of this contraction is probably aided by physical conditions, such as the apposition of the mucous membrane along the whole length of the urethra, or the tendency of the weight of urine in the relaxed bladder, and of the pressure exerted by the abdominal walls, to press the two walls of the urethra together.

Action of Cholinchlorid on Circulation.—Intravenous injections of the chlorids of cholin were found by E. FORMANEK (*Arch. internat. Phar. et Thér.*, vol. x, fasc. III, IV) to produce a fall of blood-pressure with acceleration of the pulse, soon followed by a rise with slowing of the heart's action. The depression and acceleration are due to a direct action of the drug upon the heart, the retardation most likely depending upon an irritation of the vagal centers, and the rise in blood-pressure upon stimulation of the peripheral vasoconstrictor mechanism in and outside of the splanchnic area.

Investigations on Glycogen.—In an article on the glycogen metabolism of the heart, P. JENSEN (*Zeitsch. phys. Chem.*, vol. 35, No. 6) finds that the muscle has the peculiarity of still possessing a large percentage of glycogen when the skeletal muscles are almost entirely deprived of it, though normally the latter contain somewhat more than the heart. It is still possible, however, for the glycogen, free organ to contract. As an improved quantitative test for glycogen, the following method is recommended: The fluid obtained from the organ to be tested is treated with an iodine solution and then diluted until the color of the mixture corresponds to a normal solution, containing definite percentages of glycogen, salt, hydrochloric acid and iodine solution. By means of a special scale the percentage is then read off.

Fate of Uric Acid in the Body.—Uric acid, when given to dogs, is absorbed to an appreciable percentage, according to E. SALKOWSKI (*Zeitsch. phys. Chem.*, vol. 35, No. 6). The absorbed portion is converted chiefly into allantoin and urea; it varies considerably in different experiments, and does not seem to be proportional to the amount of uric acid ingested. The experiments were repeated with rabbits, when it was found that the larger portion is absorbed and is converted chiefly into urea, a small amount only being changed into allantoin or excreted as such.

The Composition of Human Fat.—The fat of an adult human being, according to H. JAECKLE (*Hoppe-Seyler's Zeitsch. phys. Chem.*, August 9, 1902) consists substantially of the glycerides of oleic, palmitic and stearic acids. Excepting small traces of the lower fatty acids, no other acid ingredients have been discovered. The chemical composition of fat is subject to considerable individual variations. In the first months of life fat contains a much higher content of oleic acid. The state of nutrition has no influence on the synthesis of fat. In lipomas the fat in general differs not substantially from normal fat. It may be stated as very probable that the lecithin content of rapidly growing lipomas is markedly diminished below the normal. Fat can undergo extraordinary transformations as the result of pathological processes. The author believes that calcium soaps take part in the process of calcification.

NEUROLOGY.

Cerebral Activity in Infants.—The great difficulty of deciding whether in the newly born and the very young the cortical cells are active, is responsible for

the great diversity of opinion on the subject. M. THIERMICH (*Zeitsch. klin. Med.*, vol. 45, Nos. 3 and 4) has resorted to a new method, which consists in determining whether certain coordinated movements, such as the opening and closing of the hand and the lengthening and shortening of the leg, where it is known that the orderly contraction of the muscles requires the highest functions of the brain, are possible at so early an age. In only very few nurslings, several days old, were the results positive, but there was no doubt that the motor areas had their full power by three to four months. No evidence could be obtained that restless children attain the power of coordination more rapidly than the quiet.

Acute Hemorrhagic Encephalitis.—Acute hemorrhagic encephalitis, is a disease which usually affects the young, shortly after an infectious disorder, usually an influenza. After a short prodromal stage the severest cerebral symptoms set in of the type of convulsions, severe cephalalgia, coma and extensive paralyses. Recovery is rare, and it requires weeks and months before it is complete. Pathologically there is an inflammatory process with multiple hemorrhages, involving more or less of the cerebral surface, generally small in size, but occasionally so extensive as to resemble an apoplectic focus. They are probably the result of toxins, but influenza bacilli have been found in them. It was the good fortune of D. STEGMANN (*Münch. med. Woch.*, July 22, 1902) to carry a patient successfully through this serious disease with rest, ice applications and evacuations.

Spinal Cord Condition in Severe Anemias.—Degenerative processes secondary to severe anemias have been recognized in the spinal cord only during recent years, and the symptoms which are frequently found are doubtless liable to be interpreted as due to other structural changes. A. CHURCH (*N. Y. Med. Jour.*, July 26, 1902) has met with a number of such cases, and found these changes in the spinal cord to occur not only in classical pernicious anemia cases, but also in cachectic states of long duration attended by toxic factors. Examination of a large number of cases proves that the changes in the cord are in a sense mechanically located; that is, those portions of the cord less well supplied with blood are the first to suffer. The posterior half containing the sensory and motor conducting paths are therefore more frequently involved, but the gray matter, or even the anterior horns, may be affected. The symptoms are variable and obscure, and may be overlooked; but in some cases they are prominent enough to lead to the diagnosis of tabes, spastic paraplegia, or a neuritis. Symptoms of any of these conditions may be present, depending upon the portion of the cord involved. Almost invariably these patients complain principally of disturbances of sensation. They describe numbness, tingling, and formication, usually in the lower extremities, sometimes in all four. The sensation may be that of pressure from within or without, some feel as if tight bandages were drawn around their limbs. With these sensations there may be a reduction in the reflexes, causing a suspicion of neuritis. There is usually very little atrophy, and the electrical reactions are normal; but sometimes the gray matter of the cord is involved, and both atrophy and electrical changes may be present in the terminal stages. Paralyses, loss of sphincteric action and marked mental disturbances have been observed, and severe cases usually perish miserably. The prognosis depends entirely upon the blood condition. A great deal has been done in several pernicious anemia patients by continuous efforts to keep the intestinal canal aseptic and to add to the quantity as well as quality of the blood.

Intestinal injections of normal saline solution as often as every two hours have sometimes resulted very beneficially. Hematogenic drugs and intestinal antiseptics, with careful dietetics, may be judiciously used.

Etiology of Chorea.—In a careful article, G. KOSTER (Münch. med. Woch., August 12, 1902) states that in over 71 per cent. an infectious etiology could be obtained in chorea. Not only are endocarditis and articular rheumatism frequently mentioned in the past history, but often some catarrhal condition of the respiratory tract, as angina, bronchitis, laryngitis or influenza, seems to be the precursor, alone or in various combinations. Of the non-infectious cases, the majority of patients possessed a neuropathic tendency and were considerably run down, through rapid growth, over-exertion, or insufficient nourishment, and frequently showed the stigmata of a past rachitis or scrofulosis. Here the most frequently mentioned cause seemed to be fright, and often hysteria played an important part.

The Treatment of Nervous Headaches.—In an article on the treatment of functional neuroses, S. AUERBACH (Berlin. Klinik, August, 1902) discusses the causes and therapy of nervous headaches. In investigating a given case a careful examination should be made of the internal organs. One should examine for tumor of the brain with the ophthalmoscope. In advanced age arteriosclerosis of the cerebral vessels is frequently the cause. Other causes are cerebral syphilis and periostitis luetica (headaches worse at night), refraction anomalies, as well as diseases of the nose and its accessory sinuses, chronic nephritis, diabetes, alcoholism and nicotinism, gastro-intestinal diseases and constipation. Of great importance are the anemic headache, which are to be treated with iron and the bromides, the latter being of eminent value in all forms of nervous headaches. The headaches of the neurasthenic include the sensation of pressure, of a tight band about the head, or of a leaden cap. Hysteria is another cause that should not be overlooked. The most frequent form of nervous headaches is hemicrania or migraine, which is diagnosed by its heredity, periodicity and accompanying symptoms, as vomiting, spots before the eyes, etc. These cases are seldom cured entirely in the young and middle-aged, but are more frequently combated with success in the fifth and sixth decades of life. The treatment is like that of neurasthenia. The pain is diminished and the number of attacks lessened by doses of bromide of from three to six grams per day. Arsenic used for a long time is frequently of great value. Other remedies are hardly as efficacious as the above. The best are the coal-tar products. The habitual headaches are mostly neurasthenic; in the beginning they have the traits of hemicrania, which later disappear. A very common form of headache is what the author calls the "nodular" form. Principally of a rheumatic nature, it almost always begins in the back of the head and spreads over the sinciput and forehead. In cases that have lasted a long time the headache is constant, increases when the patient lies down, and frequently becomes most agonizing, with no remission at night. In these patients there are found along the linea semilunaris of the occipital bone, also along the back of the neck, and sometimes in the parietal fascia, nodes varying in size from a millet-seed to a bean, mostly flat, but at times prominent and always very sensitive. The patients often complain of pain in the back and along the arms, where similar nodes are found. One characteristic of these patients is that they are extraordinarily sensitive to wind, cold and dampness. The disease is most frequently seen in women. The treatment in the beginning is the application of warmth and massage, which should be persisted in notwithstanding

the pain caused. In the acute stage one should employ sodium salicylate or aspirin in fair doses.

SURGERY.

Cocaine in Metatarsalgia.—In a case of the malady of Morton, without disease of the bones of the foot and toes, H. VURGER of Bordeaux (Sem. méd., No. 34, 1902) decided, on account of the failure of every means of treatment which the patient had previously had, to use injections of cocaine to control the pain. In order to define at the outset, if possible, the point of departure of the pain producing spasms, he made, at the point of greatest tenderness, an injection of one c.c. of cocaine, two per cent., pushing the needle-point down to the bones themselves. After a few minutes all pain on pressure disappeared, and during five weeks subsequently, no crisis recurred. At the end of that period he made another similar injection, and since that time the patient has had no attacks whatever. At the time of Vurger's writing, only three months had elapsed since the second injection was carried out, and therefore the cure could not honestly be considered absolute, but the result is certainly instructive and suggestive, because the patient previously had not passed a single night without an attack of severe pain, and occasionally suffered four or five of them in one day. Another significant fact is that ordinarily metatarsalgia is very rebellious to treatment.

Infection with Gas-Producing Bacteria.—The almost uniformly fatal results of infection with gas-producing bacteria in the tissues makes all information on the subject valuable. The following conclusions are offered by P. ALBRECHT (Arch. klin. Chir., 1902, B. 76, H. 3): Infection of wounds with gas-producing germs is possible during operations through the dust of the room alone, notwithstanding all the precautions of asepsis and antiseptics. If, in these cases, there is a pure infection with these germs, the symptoms about the wound are comparatively few. There are signs of infection, prostration, burning and pain in the wound, increase in the pulse and temperature. Nevertheless, in many cases, if the wound is opened and cleaned of the serohemorrhagic fluid in it, recovery is comparatively rapid and complete. With mixed infections of these gas-producing germs and the pus-producing germs the typical danger of gaseous gangrene appears. In seven cases observed by this author, the only effective means was the freest possible drainage. All of these patients recovered. "Bacillus of the malignant edema" is a collective term for a class of aerobic and anaerobic germs. All of these, when injected under the skin of animals, provoke a disease resembling or exactly like that which Robert Koch induced by similarly injecting foul fluid beneath the skin of guinea-pigs, from his results calling it malignant edema. Of six different kinds of the aerobic bacilli which this author has investigated four are similar to the bacillus described by Welch and Fraenkel with varying degrees of exactness. Two seem to be essentially like the germs described by Schattentfroth and Grossberger under the name of bacilli of rancid butter. In accordance with Albrecht's observations, most of the cases which are described in literature as malignant edema in man do not deserve that title. The diseases which are presented under this name ought to be called gaseous infections.

Treatment of Appendicitis with Salicylate of Soda and Belladonna.—It is some time since T. R. BRUNTON (Sem. méd., No. 33, 1902) treated with great success appendicitis by means of salicylate of soda and belladonna in high doses. He prescribes 0.90 of a gram, to 1.20 of a gram, of salicylate of soda and 10 to 15 drops of the tincture of belladonna every two hours.

The two medicines may either be given together or alternated. It may be wise not to mix them, because it is important to cease the administration of either just as soon as symptoms of intolerance arise, such as ringing in the ears for salicylate of soda, and dryness of the throat, dilatation of the pupils and excitement of the pulse for belladonna. So soon as it is manifest that any of these symptoms are arising, it is well either to stop the drug for awhile, or to decrease the doses liberally.

Operations on the Spinal Cord.—It is not many years since various authorities described surgical approach of the spinal cord as unwarranted, ultrahazardous, and its results as problematical. The general attitude was to leave to a supposedly inevitable fate those unfortunates whose vertebrae were broken or dislocated. Then there came an era during which it was recognized that surgical operations on the spinal cord were justifiable, notwithstanding their dangers and difficulties, when the symptoms pointed to pressure rather than destruction of the cord. At the present time we have advanced one step further in having recognized that nerve tissue is capable of considerable regeneration, even when the symptoms at a given time point to the contrary. We therefore operate on an increasing number of cases, and on the whole with greater success. But the niceties of deciding which cases are best to operate on, and when to do the work, are still in dispute. E. HAHN, in a valuable article on this subject (*Deut. Zeitsch. Chir.*, B. 65, H. 5 and 6, 1902), seeks to answer these questions in the following terms: It is impossible to operate too early on patients suffering from compression of the cord through fracture of the vertebral arches. If, after excision and exposure of the arches, it is evident there is no fracture, it is perhaps better not to proceed any further at that sitting. With fracture and compression complicated with dislocation, and undoubtedly resulting in absolute destruction of the spinal cord, it is manifestly improper to do any operation. As long as there is distinct evidence that the case is one of contusion with bleeding, operative interference should be withheld. Weakness or paralysis of the muscles, due to fracture with compression by a narrowing of the canal, naturally require a laminectomy, with the purpose of freeing the cord from the pressure. In these cases it frequently happens that the source of pressure proceeds from the body of the vertebrae; therefore removal of the arches will often entirely relieve it. If this should not succeed, it is probably justifiable to attempt to remove whatever portion of the body of the vertebrae presents. To carry out this procedure it is necessary to draw the spinal cord aside with great gentleness, in order to chisel away the offending bone. The most difficult point in all these cases is to decide the time for operating. His conclusion on this is that operation must be undertaken just as soon as it is decided that without it no improvement can possibly occur. All cases which may undergo improvement without operation should be allowed to make this progress first. As a rule, in such patients late operations bring about better results than very early interferences.

Diagnosis of Congenital Dislocation of Hip.—It has been shown that many children are born not with the hips already dislocated, but with a decided anatomical tendency toward dislocation as is shown by changes in the contours of the acetabulum and the head of the femur, as well as in the relation of the two to each other. It is extremely difficult to make the diagnosis in the newly born, and the average physician does not possess a Roentgen apparatus to aid him. P. BADE (*Munch. med. Woch.*, August 26, 1902) draws attention to several folds whose course varies in dislocation. One of

these runs downward and inward between the quadriceps extensor and the adductors; another is situated somewhat lower and begins nearer to the median line. In normal thighs both sets of folds are situated equally high, and the adductor folds meet on the inner sides of the thighs, but there is a distinct asymmetry where there is only a disposition to luxation. By carefully observing these lines the diagnosis can be made very early and treatment begun before the children walk.

Abdominal Wounds.—The treatment of abdominal wounds, especially those complicated by prolapse of the omentum and injury to the spleen, is discussed by O. BERNHARD (*Correspl. schweiz. Arzt.*, August 15, 1902). Concerning the omentum, either of two courses may be followed—the expectant one, where the hemorrhage in the prolapsed portion is stopped, the entire region carefully sterilized, and the omentum wrapped in sterile gauze, to be removed later when demarcation occurs; or where the piece is reduced. Though the records show that success may follow both procedures, the second seems preferable, since, with the first, strangulation of a loop of intestines may occur later, and any hemorrhage occurring in the abdominal cavity is obscured by the plug in the abdominal incision. When, on performing a laparotomy, an injury to the spleen is discovered, the attempt should always be made to treat it by suturing. If this is impossible no time should be lost in extirpating the organ. That this need not seriously influence the composition of the blood is shown by a case reported by the author, but it is a strange observation that the laparotomy wound did not heal so well, and that the sutures gave way, which may have been due to change in the fibrin formation of the blood induced by the absence of the spleen, and may fall into the same category as the hemorrhages seen in leucemia. Injuries to the liver are less dangerous when they involve the convexity, since here the blood and bile channels are smaller in size and tamponade will generally suffice, but it is always advisable to so enlarge the wound in order that no other hemorrhages be overlooked. Cuts in the diaphragm require suture to prevent subsequent diaphragmatic hernias, but the diagnosis may occasionally be very difficult; if not, as in this case, the entrance of air, after opening the abdomen, is followed by an audible noise.

Treatment of Ulcers of the Leg.—In ulcers of the leg, not larger than a dollar, the following method of treatment is advised by C. CHENOWETH (*Med. Rec.*, August 30, 1902). The leg is put into hot water for an hour, washed with soap and clean water, dried, then washed with a weak formaldehyd solution, dried thoroughly, and dusted with boracic acid powder. Strips of rubber adhesive plaster half an inch wide are then applied tightly, beginning just above the toes and overlapping each lower strip up to the knee. An ordinary roller bandage is then applied. This dressing remains till the discharge shows through, which will be about six or seven days. Another dressing is then similarly applied. If the ulcers are larger the patient should be put to bed and a moist dressing of one ounce of boracic acid to a quart of water be applied. At the end of two weeks the ulcer will usually be small enough to begin the above treatment.

Double Craniectomy.—Probably one of the most remarkable examples of successful cerebral surgery on record is that reported by A. GHEDINI (*Rif. Med.*, August 29, 1902). The brain of the patient operated upon had been pierced by the prong of a pitchfork in such a manner that, entering the right parietal region, it passed completely through the brain, making its exit in the left parietal area. Its path was marked by fracture of the right and left parietal bones and laceration

of both cerebral hemispheres, resulting in delirium, unconsciousness, left hemiplegia, right crural monoplegia, epileptiform convulsions, and clonic contraction of the right arm followed by paralysis. Double craniectomy was performed, which operation revealed a large subdural hematoma in the right Rolandic zone, with extensive laceration of brain tissue, and compression of the left side by a fragment of bone. After clearing out the hematoma by curettage, and removing all loose bone, a gauze drain and temporary sutures were inserted in the wounds of both sides. The patient bore the operation well, and left hemiplegia disappeared in the evening. On the second day the drains were removed and the wounds permanently closed. Within seven days they healed by first intention. Gradual disappearance of all symptoms followed the operation, so that within less than three months there remained but a slight remnant of paralysis in the right lower extremity.

Treatment of Surgical Tuberculosis.—In reviewing the various tuberculous lesions which fall to the lot of the surgeon to treat, L. F. GARRIGUES (Med. Rec., August 23, 1902) describes the ordinary method of enucleation of the glands of the neck, but mentions a new application which he has found very effective in the treatment of those chronic discharging sinuses of the neck due to the gradually breaking down glands, and where operation is impossible or impracticable. The sinus should be laid open freely, and butter of antimony applied to the floor. This causes a sloughing of the degenerated tissue, varying in depth from that of a film to half an inch. This substance is used considerably in veterinary surgery, but is little known to the medical profession. It is a strong escharotic, and must be used with caution, as severe hemorrhage may be caused. The slough should not be removed, but allowed to separate, and a second application should be made only after granulations have formed.

Primary Carcinoma of Appendix.—Since a malignant growth primary in the appendix will seldom give symptoms till it has involved the cecum also, operations for the relief of this condition are seldom made soon enough for a diagnosis of the above condition to be made. Only 13 such cases have been reported. A woman, thirty-six years old, was recently operated upon by Dr. Clement Cleveland for disease of the uterine adnexa, and as the appendix was bound down by adhesions it was removed. Upon microscopical examination D. S. D. JESSUP (Med. Rec., August 23, 1902) found that the appendix contained a small but distinct adenocarcinomatous growth at about its middle, where there was a sharp bend and the lumen was obliterated. In reviewing the previously reported cases it is found that four were under thirty years of age, and that the growth is usually at the apex. Routine examinations of appendices will undoubtedly show that it is a more frequent condition than is now supposed.

HYGIENE.

Borax as Food-Preservative.—In a series of articles in the *Arb. kais. Gesund.*, vol. 9, No. 1, the danger of the use of boric acid and borax in the preservation of food are fully discussed. As is well known, ham, bacon, sausage, fish, caviar, milk, butter, etc., frequently contain as much as 3 per cent. of the drug, so that under normal conditions as much as several grains a day may be taken into the system by consumers. Experiments on animals, as well as on man, do not seem to give evidence of any pronounced local action of borax on the mucous membranes, except with large doses in a concentrated form, and then borax acts more intensely than does boric acid, causing eructa-

tions, nausea, vomiting and diarrhea. The absorption of the nitrogenous principles of the food was considerably delayed, but no specific effects upon proteid metabolism could be determined. After the prolonged use there was considerable and rather sudden loss of weight, probably due to increased fatty dissolution. Excretion was found to be very slow. The influence of the borates on the milk hindered coagulation even in considerable dilution, and thus rendered the milk less valuable for nurslings. Other effects on the organism were diuresis and eruptions. The general conclusion is that the use of borates in food should be interdicted.

Faulty Methods of Fumigation.—The usual methods of fumigation have lately been superseded to a great degree by the formaldehyd-gas process. G. E. PFAHLER (Phil. Med. Jour., August 16, 1902) has investigated the latter method and finds that it must be improved in application or else it will in turn be discarded. He exposed cultures of the ordinary germs in rooms carefully fumigated with formaldehyd gas, after well-advocated methods, and permitted a large margin, both as regards the exposure and the quantity of material used. The results were almost entirely negative, and the fact that the most common forms of bacteria were so little affected may be taken as an indication that the germs about which we are in ignorance—measles, scarlatina, mumps, etc.—were probably not killed. The author thinks that a more satisfactory method of application will necessitate an apparatus capable of generating the gas either ten times as fast or in a more concentrated form.

GENITO-URINARY AND SKIN DISEASES.

Radical Cure of Ischuria from Hypertrophied Prostate.—The radical cure of this condition by cauterization of the prostate through the rectum is described in detail by the originator of the method, A. NEGRETTO (Gazz. Osped., August 10, 1902), by whom it is considered superior to the numerous measures hitherto employed, in that it is promptly efficacious and requires but few and simple instruments of moderate cost and easy application. The requisite tools are a speculum—preferably the trivalvular of Weiss—a tenaculum devised by the author, the special advantage of which lies in a scale, marked upon its handle, which indicates whether or not it be displaced, and a Paquelin or galvanocautery. The rectal route for cauterization makes it possible to treat the entire prostate, whereas Bottini's method permits cauterization only of the middle lobe. The doctor proceeds as follows: Two nights before the operation a purge, preferably of oil, is given, and the night before, a large dose of bismuth (eight to 10 gr.) with opium (1¼ gr.) is administered. One hour before the operation a glycerin enema is given to guard against the possibility of fecal infection of the operative site during the operation. General anesthesia is preferred, but where this is impracticable an alcoholic solution of chloral with morphine has rendered the procedure painless. The patient is placed in the perineal-lithotomy position with the pelvis well raised; rectum dilated with the speculum and packed with sterilized gauze above the prostate. The speculum is then withdrawn, the left index-finger introduced into the rectum, and the center of the gland is sought. Following the index as a guide, the tenaculum is inserted at this point, slight traction upon it being exerted by an assistant. The speculum is replaced and, if necessary, gauze packing introduced to hold back any folds of the rectal mucosa. Cauterization with the Paquelin or galvanocautery is then practised all around the point where the tenaculum is inserted, the cautery being laid flat. The extent and depth of cauterization are regu-

lated according to the size of the gland; but usually it is superficial, as this is generally sufficient to induce involution. However, in the case of a very large gland it has been found advisable to supplement flat cauterization by deep insertion of the cautery immediately around the tenaculum and about to the depth of its point. The operation is said to last only about two minutes. After the operation the dose of bismuth and opium is repeated, that the site of operation may be kept clean for several days, and a permanent Nélaton catheter is left in position for a few days, its removal being followed by thorough disinfection of the bladder and urinary passages. The advantage claimed for such use of the catheter is reduction of congestion through mechanical distention of the urethra, and consequent facilitation of the discharge of urine from the bladder. This decrease of congestion plays no small part in the reduction in the size of the gland. On the sixth or seventh day a purge of oil is given, the resulting stool causing the discharge of the gauze packing, which has been left in situ. Usually after 10 or 12 days the catheter is permanently removed, and urine is thereafter voided naturally. In the 12 cases so treated Negretto has had marked improvement or permanent cure, with no unfavorable effects save in a few instances in which there was bloody urine for a day or two after operation. An important factor in the reduction of the size of the prostate by this method is believed to be its power to overcome congestion. The operation is also said to be devoid of danger and to have the inestimable advantage of being without effect upon the genital organs.

THERAPEUTICS.

New Treatment for Parotiditis.—From the benign course which this disease usually follows has arisen a somewhat indifferent mental attitude as to its treatment, yet when its possible complications are taken into consideration, an effective therapeutic measure for its control must needs be welcome to all physicians. E. GRANDE (Gazz. degli Osped., August 10, 1902) offers a valuable suggestion in his adaptation of guaiacol ointment to the treatment of the disease. In a series of 12 cases he has had only good results from the use of the remedy, pain and swelling disappearing after two or three applications, and in some instances after one. The surface irritation observed when this remedy is used in orchitis and epididymitis is absent in parotiditis. The writer uses a 5 per cent. guaiacol ointment, applying it to the entire parotid region, and covers this with carbolized cotton. A bandage is then applied with some compression. The dressing is removed within 24 hours and the medicament reapplied, this procedure being repeated as often as necessary. The author thinks it possible that the volatile nature of the remedy may facilitate the penetration of its antiseptic properties to the in the treatment of parotiditis.

Iodin Reaction on Leucocytes.—The action of iodine on the white blood-cells in various diseases was made the subject of an investigation by R. C. Cabot and E. A. Locke, the results of which have been lately published. E. A. LOCKE has made a series of clinical tests in 800 cases, and publishes the following conclusions (Bost. Med. and Surg. Jour., September 11, 1902): Septic conditions of all kinds, including septicæmia; abscesses and local sepsis, except in the earliest stages; appendicitis, accompanied by abscess formation or peritonitis; general peritonitis; empyema; pneumonia; pyonephrosis; salpingitis with abscess formation; tonsillitis; gonorrheal arthritis; hernia and acute intestinal obstruction, where the bowel has be-

come gangrenous these have invariably given a positive iodophilia, and by its absence all these cases can be ruled out in diagnosis. In other words, no septic condition of any severity can be present without a positive reaction. The test should, of course, always be considered in connection with other clinical features. The author believes the iodine test to be a far more reliable and constant indication of the severity of an infection than either the leucocyte count or the temperature.

Injection Treatment of Syphilis.—The objections to the hypodermic injection method in treating syphilis are believed to have been largely overcome in a formula devised by M. L. HEIDINGSFELD (Jour. Am. Med. Assoc., September 13, 1902). He has modified Lang's formula, which was found irritating and difficult to preserve. A bidistilled form of mercury is used, the same that dentists employ in amalgams, six grams of this being incorporated with two grams of lanolin in a clean mortar. Two grams of "liquid albolene" are then added, which holds the constituents in suspension and renders the mixture sufficiently fluid for injection. He uses a seven-eighths inch 22 gage steel needle and injects deeply into the subcutaneous tissue, preferably at the most prominent part of the buttocks. The author's rule is to give an injection every fourth day, using a grain dose (which contains about one and one-third grains of metallic mercury) and continuing until 15 injections have been administered. In recent cases three courses of injections are given during the first year of infection, two the second, one the third, and one every two or three years thereafter. During a period of 12 months the author used the method with gratifying results in 240 cases, more than 2,000 injections having been given. Pain is seldom noted, and if present is usually slight. Induration is not marked. Other complications are readily avoided by care in administration. The author recommends beginning with a minimum dose—one-fourth to one-half grain—and increasing to a grain or more as tolerance is established. This is especially recommended where an idiosyncrasy to mercury is present.

Influence of Neurin on Circulation.—The influence of neurin, a decomposition product of lecithin, obtained from brain, the yolk of egg and bile on circulation, has been studied by E. FORMANEK (Arch. internat. Phar. et Thé., vol. x, fasc. III, IV). When injected into dogs, there is noticed a considerable rise in blood-pressure, and an unimportant acceleration of the pulse, which soon makes way for a considerable retardation. Only the first injection, however, is of importance, since the second may be without any effect. The retardation and rise in blood-pressure were also noticed after preliminary vagotomy, but disappeared rapidly when atropin was injected. After destruction of the entire spinal cord the pulse tension was much less, though still above normal. It follows that the increased blood-pressure is due to irritation of the peripheral vasoconstrictor nerves and the vasoconstrictor centers in the cord and medulla; the retardation, to irritation of the peripheral vagus endings.

Efficiency of Anthelmintics.—In his article on the value of the different remedies employed against intestinal worms, E. SOBOTTA (Ther. Monatsh., August, 1902) states that pelletierin tannate failed in six cases, despite the fact that it was given in sufficiently large doses to cause toxic symptoms. Extract of male fern in doses from seven to eight grams proved to be highly satisfactory if the intestines were evacuated before administering, and no intoxication ever occurred when it was followed by laxatives. It is not necessary to employ castor oil; other cathartics, such as the infusion of senna, are also available. Fasting for a few days before the cure is recommended.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	\$4.00
SINGLE COPIES10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in registered letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, OCTOBER 4, 1902.

THE CONDITION OF PRESIDENT ROOSEVELT.

THE news of the accident to President Roosevelt came as a shock to the country, as the national mind has grown pessimistic in regard to casualties occurring to our chief magistrates, and it was only after the lapse of several days—during which the program of the West was being carried out—that the anxiety was allayed. This was, however, rekindled and increased by the news that an abscess had formed in the leg, and that it had been necessary to perform an operation and to abandon the proposed continuation of the President's trip. From that time a general uneasiness has been felt, and though on all sides it has been regarded as a temporary matter, yet the known restlessness and activity of the patient and his natural repugnance to enforced restraint have been taken as an offset to the excellent physical condition with which his devotion to athletic pursuits has rewarded him.

The severe blow received in the trolley accident was on the crest of the tibia, about midway between the tuberosity and the malleoli, and was followed by the formation of a cyst between the skin and the periosteum. This, under the strain of incessant movement and from the absence of rest, increased until it finally became necessary to aspirate it, which was done on Tuesday, Sep-

tember 23, at St. Vincent's Hospital in Indianapolis. After the fluid was drawn off the patient's general condition improved for a few days, then the localized tenderness was again increased until Saturday evening, September, 27, when the wound gave every indication that the drainage was insufficient, and as the President's rising temperature corroborated this belief it was determined to make a free incision.

The operation was done on Sunday afternoon, an injection of cocaine being administered to allay the pain. The cut was carried through the cyst and through the periosteum, and the bone laid bare for several inches above and below the center of infection. The bone was found to be roughened and to a degree honeycombed, the probe here and there showing slight depressions. The surface of the bone was scraped, the wound dressed, with every facility for thorough drainage and all necessary antiseptic precautions, and as the temperature has since been normal, and all alarming symptoms have disappeared, no future complications are looked for. The President has two nurses, one from the army and one from the navy, to assist in moving him, as the only possible danger lies in the rather difficult task of keeping him quiet. Yet he is driven out daily; his appetite is good; like his temperature, the pulse and respiration are normal, and there seems every reason to expect a prompt recovery.

It is characteristic of the man that his only feeling during the operation was one of amusement at the amount of care taken in the antiseptic precautions preliminary to the operation itself. He remarked that a splendid head-line to a sensational newspaper report would be, "Washed at Last." Let us hope that there will soon be no necessity for newspaper bulletins of any sort, and that the wound and the incident will soon be reported closed.

"HAVE YOU ANY WOOL?"

OLD Mother Goose was a woman of parts, and though her sayings at times lacked the coherence and clearness of the utterances of the oracle of Delphi, yet there was withal an undercurrent of practical wisdom in her nonsensical couplets which leads us to think that her celebrated query to the "black sheep" was propounded in the late summer or in the early fall. For it is just at this time, somewhere between the appearance of the oysterical "R" of September and the full fruition of the brown October ale, that the summer cold ripens into the autumnal cough, and the seeds of

influenza and protracted inflammatory troubles are sown in the mucous membranes by the too rapid cooling of the body when overheated by exertion.

In protecting themselves against this danger our English cousins are wiser than we, for apart from our sporting paraphernalia and our outing clothes we make but little use of flannel; and even in those it is the shirt major, and not the inside garment, that is of wool, its principal object, too, being rather to present a semirespectable appearance at the camp-fire or on the field than to provide a vehicle for the absorption of perspiration. This condition of affairs is due partially to the conservatism and the *vis inertia* of established habit, and is also partly the fault of the manufacturers, for up to within a few years the goods put on the market, even if they were all wool and a yard wide, have been unnecessarily thick, and so heavy as to be practically useless for the purpose for which they were intended. Not only were they clumsy and cumbersome, but they were so closely woven that they prevented the escape of the exudations, and their use caused an irritation of the skin and at times an intolerable itching. They also presented the effect of heat to the imagination.

All this has now been modified by art and improved methods of manufacture, until the hygienic underwear at present found in the shops is light in weight and loose in texture, and entirely different from the ordinary flannels of the past. It is, however, only natural that there should be a lingering idea in the minds of the laity that wool is hot, for the process of wrapping the body in blankets, which are non-conductors of heat, to confine the animal warmth and prevent the temperature from being lowered by admixture with the colder atmosphere, is as common as a winter night, and one, too, that does much to prevent us from dreading the grave as little as we fear our beds. The reverse of this is also true, for the same non-conducting medium that hinders the heat from escaping will also prevent it from entering, a familiar illustration of which is the action of the thrifty housewife in wrapping her ice in a blanket to keep it cold.

All this is a simple matter in itself, and it is only when we come to the question of the wisdom of swathing a body, heated to about the same degree of temperature as the surrounding air, in wool, in order to cool it off and to keep it cool, that the problem becomes a complicated one to the non-professional mind. That it will do it is unquestionable, and the key to the apparent paradox lies

in the woollen fabric's bifold property of non-conductivity to heat and permeability to moisture at the flannel's outer surface, as was recently pointed out in a contemporary, the New Haven Times.

This evaporation disperses the heat and thus lowers the temperature—a principle which forms the basis of the "monkey" or East Indian water-cooler, and which is also taken advantage of by the soldier who keeps the cloth covering of his canteen wet on a hot day. So, as will be readily seen, a wet flannel shirt will dispose of the surplus heat and gradually cool the body.

Cotton, on the other hand, does not possess these qualities, and when this is used for underwear the bulk of the perspiration is held unabsorbed on the surface of the skin, while the little that is taken up by the garment is not evaporated, but remains as a wet layer that chills the body and leads to the catching of colds and consequent inflammatory action. The danger of this is naturally intensified by exposure to a draft of air and delay in removal of the damp clothing—a compromise being generally attempted by the putting on of an overcoat or wrap, and the taking of some alcoholic stimulant.

Of late years, however, linen has come into prominence, its advocates claiming that, when woven into what is known as "mesh," it exceeds all other materials, both in its power of absorption and its capacity for evaporation. It certainly raises the outer shirt from direct contact with the inner one, and this allows a current of air to circulate over the surface of the skin. This is undoubtedly hardened by the process, and gains an increased power of resistance to exposure, while it loses its susceptibility to the effects of extremes in temperature. It is now claimed, with apparent truth, that the ideal clothing for a life of strenuous activity is the combination of an undershirt of mesh linen with an outer one of the lightest and most porous wool.

Of course, this is all largely a matter of the seasons. In summer the air is so warm that there is little danger of "catching cold," and in winter the man who is used to outdoor exercise seldom works himself into anything more than a healthy glow. So that it is during the autumn that we must be on our guard, in the days of the insidious fall, when the rays of the sun are still strong, while the wind is keen and nipping—days that have been not inaptly described by some inglorious Milton of the Sierras as "the saddest days of all the trying year, when it's a little too warm for whiskey and a little too cold for beer."

RECENT WORK ON THE STOMACH.

ELSEWHERE in this issue is to be found a much condensed abstract of the leading articles on the stomach published in Europe in 1901. Laboratory methods of studying stomach-disease have awakened a great interest in this formerly neglected part of pathology, and there now exists a large corps of gastric specialists who are devoting their entire time to this branch of work. The use of the stomach-tube and of the prescribed meal enables the medical practitioner to form a more accurate conception of the condition of the stomach and of the effects of given food on the human economy than could ever be possible with ordinary animal experimentation; for the conditions of human alimentation, including mastication, taste and other factors, can never be duplicated in any subhuman animal available for research. Physiologists have thus begun to study digestion in human beings, and they will supplement the knowledge gained thereby through the study of dogs, rabbits and other animals.

It is an important demonstration that foods have two distinct and different influences on gastric secretion; namely, the peptogenic and the succagogic, for this opens up the prospect that we may so combine foods that we shall obtain just the amount of desired action of each kind, the problem of adult feeding in pathological conditions of the stomach becoming analogous to that of infants by modified milk.

That the functions of the stomach may in some measure be carried on by the pancreas, and the work of the pancreas partly assumed by other organs, indicates that the division of labor has not been such as to make the cells unable to do something beyond their routine work. And this would suggest that when one viscus is hopelessly disabled by disease we should direct our special attention to promoting the activity of the organs to which the impaired viscus is most closely related.

Reichmann's disease or gastrosuccorhea, the condition in which secretion goes on even when not stimulated by the presence of food in the stomach, becomes of vastly greater interest when we think of an ulcer as its basis, and of the necessity of gastro-enterostomy for its relief. More and more are the surgeons entering the domain of stomach-treatment, for we find them locating and cutting out ulcers, reefing the stomach for dilatation, and now even performing gastro-enterostomy for continuous secretion. Perhaps they will next turn the stomach inside out in chronic gastritis and apply the cautery or curette to inflamed areas, as the rhinologist would treat

a hypertrophied mucous membrane of the nasal cavity.

That lavage is more frequently resorted to by the general practitioner than by the stomach specialist, everybody knows; yet the specialist does not abhor it, but limits his lavage to those cases in which something definite is to be gained by removing what is in the stomach. The stomach normally does not need washing, and often digestion is more helped by leaving in a perverted secretion than by its removal. Certainly nothing can be gained by lavage in an ordinary case of hyperchlorhydria, for lavage removes the mucus, the natural protector of the mucus membrane, and exposes that membrane to all the irritating action of the highly acid gastric juice. And if it is true, as stated by different observers, that frequent lavage tends to produce glandular inflammation, overactivity or muscular weakness, then the procedure should hardly be resorted to as a routine practice. It can not be doubted, however, that there is no other method so good for cleaning out the stomach when excessive fermentation is going on, or when the mucus is so abundant as to interfere with digestion. Few who have noted the thinness of the layer of tissue separating the base of a recent ulcer from the peritoneal cavity would care to risk the introduction of a stomach-tube in hemorrhage from the stomach, unless the diagnosis of ulcer were decided against, or the ulcer were of long standing and probably protected by adhesions. With all this new interest and the new clinical methods, diagnosis and treatment in gastric difficulties appear to have a hopeful future.

INSURANCE AGAINST EPIDEMICS.

THE cost of the smallpox hospitals in London is £16,000 per annum. In the absence of any serious outbreak of smallpox this seems a large sum. Its expenditure enables the London authorities to be in constant readiness for any emergency. They regard this sum "as the premium which London pays for the assurance that every outbreak of smallpox shall be promptly and effectually dealt with, and prevented from developing into an epidemic."

If London needs insurance against epidemics, so does New York; and protection against scarlet fever and diphtheria is just as necessary as measures for the control of smallpox. Until the principles of isolation and disinfection can be as efficiently applied in private as in hospital practice it will remain true, as Mayor Low recently declared, that "sanitary science demands the in-

creasing treatment of infectious diseases in hospitals." But we must not be led blindly into a mere reduplication of the London hospital system. Our local needs and means may justify a departure in certain particulars from the methods which find approval elsewhere.

Not until 1889 did the notification of infectious diseases become compulsory in London. In the ten years following the percentage of admissions to notifications increased from an average of 33 per cent. to 74 per cent. for scarlet fever, 69 per cent. for diphtheria, 40 per cent. for enteric fever and 84 per cent. for typhus. This is an admirable record. In New York about 10 per cent. of the reported cases of infectious disease receive hospital treatment. Evidently we are neglecting "an element of safety." The question may well be raised, however, whether *gratuitous* hospital treatment, such as every person suffering from an infectious disease is entitled to in London, is either desired by or desirable for 80 per cent. of the cases occurring in New York. Not so very long ago the patient who accepted treatment in the poor-law hospitals of London consequently incurred the civil disabilities of the pauper. This stigma was removed by law in 1891, and since that time a constantly increasing number of London's infectious sick have been glad to resort to the excellent hospitals of the Metropolitan Asylums Board, where gratuitous treatment is provided. If we send all of our smallpox, scarlet-fever, diphtheria and even typhoid patients to public hospitals for free treatment we shall deprive the practising physicians of New York of a legitimate source of revenue, and the sick who are able to pay for medical treatment of the right to choose their own physicians.

New York needs more hospitals for the treatment of infectious diseases. The city should build and conduct those for the poor, and the supervision of the Department of Health is all that is necessary to insure the proper management of hospitals which shall be available for the well-to-do. Public appreciation of the benefits of hospital treatment of infectious diseases is steadily increasing. But there is no education whereby families able to pay can be reconciled to the isolation of their sick members in free public hospitals. For this class smallpox hospitals are needed as well as scarlet-fever hospitals, and we hope to see this want satisfied.

Conference on Tuberculosis.—The Conference of the International Central Committee has announced its program for the autumn meeting, which will be held in Berlin October 22 to 26 inclusive.

ECHOES AND NEWS.

NEW YORK.

Impure Air in Theaters.—President Lederle of the Board of Health has announced that his inspectors have inspected the 53 theaters in New York with a view of finding out those that are within the requirements of the Sanitary Code. Reports from 23 of the theaters showed them to be in a good condition; 15 lacked ventilation in toilets; four, ventilation in dressing-rooms; two, ventilation in cellars; three, toilet accommodations; 20 had defective plumbing; 11 had been complained of because of general uncleanness, and one had a wet cellar. Notices ordering the owners to repair the defects had been sent to the owners and lessees.

Nurses Go Free.—District-Attorney Jerome appeared last week in the Court of General Sessions and moved for the dismissal of the indictments against Michael Carroll and John Foley, two nurses charged with the death of Herbert C. Wardman, a patient at the Manhattan State Hospital, who died there on March 5, 1901. An investigation resulted in the indictment of Carroll and Foley, charged with inflicting injuries on Wardman while he was in their care, and which subsequently resulted in his death. Mr. Jerome told the court that there was such a conflict of medical testimony that the men could not be convicted, and that a trial would be a useless expense to the county. The indictments were accordingly dismissed.

Medical Inspection of the City Schools.—The medical inspectors are complaining that under existing conditions it is impossible for them to do their work properly. The average inspector has four schools, which means that he has about 5,000 children to attend to. A general examination of all the schools is called for every day. In addition to this every child in each of the schools has to be examined, as it were, in detail once a week. That is to say, the eyes, hands, throat and head of the pupil have to be scrutinized. The inspector has frequently to examine 2,000 children in this way in two hours. In every case in which a child is sent home an exclusion card has to be made out, giving the name of the child, a diagnosis of the case, the date, and so on. These details are supposed to be attended to in the short time set apart for medical inspection. The present appropriation is not large enough. To do the work as the department wishes to have it done, at least twice the actual number of men are needed. It is a physical impossibility to examine 5,000 every day in a general way, and the same number individually once a week.

PHILADELPHIA.

Decrease in Typhoid Fever.—During the past week but 93 new cases have been reported, as compared with 125 for the previous week. The number of deaths was three less.

Legacies to Hospitals.—The will of David Simpson of Collingswood gives \$5,000 each to the West Philadelphia Hospital for Women, to the Polyclinic, and to the Rush Hospital for Consumptives.

Masseuse Wins Suit.—A masseuse of this city recently brought suit against a man for money due her by reason of a contract with him to give his wife massage treatment in hope of reducing obesity. The defense claimed that instead of reducing the patient's stoutness massage increased the condition, and \$1,000 damages was asked. The court decided in favor of the masseuse.

State Homeopathic Medical Society.—The 38th annual meeting of the Pennsylvania State Homeopathic Medical Society was held in this city September 23-25. A resolution urging the appointment of a member of the homeopathic school on the State Pharmaceutical Board was adopted. This has been customary, but the

Governor failed to make such appointment this year. Dr. W. C. Goodno of Philadelphia was elected President. Next year's meeting will be held in Scranton.

University of Pennsylvania.—The session of 1902-'03 has opened with several changes in the medical department, chief of which is the election of Dr. Charles H. Frazier to the position of dean. All clerical work is now in the hands of an assistant, this allowing the dean time to attend to professional duties both at the University and outside. Dr. Frazier is Professor of Clinical Surgery. Another important change is the assumption by Dr. George E. De Schweinitz of the chair of Ophthalmology made vacant by the death of Dr. Norris.

Eastern Penitentiary Investigation.—Among the charges against the officials now being investigated by the State Board of Charities is that of allowing a convict physician, a murderer and paranoiac, to have the run of the drug-store and to compound prescriptions. When the prison physician was on his vacation this doctor practically had charge of the medical department of the institution, a former prison physician being asked to visit the place if necessary. He was not called. According to reports these physicians admit the truth of these charges. If proven, the matter will probably be brought to the attention of the State Medical Board.

Coal-Famine and Mortality Rate.—The statement from New York that pneumonia and kindred diseases are increasing because of insufficient heating due to scarcity of coal, does not apply as yet to this city. That this will be the result later on is probable. In former years about 15,000 tons of coal have annually been distributed to the poor by the Board of City Trusts, and an equal amount from various funds. While the strike continues there will not be a ton to distribute, and suffering and death must be a result. A more hopeful view is that there will be a reduction of the spread of diseases which result from overheating of houses and lack of fresh air. The organized charities of the city have as yet taken no action regarding the matter.

Feeding in Typhoid Fever.—On the same occasion Dr. William E. Robertson advocated more liberal feeding during this disease. Give food the most nutritious and the least liable to injure the patient's bowels. This conserves his strength. Recrudescence and relapse are due to reinfection instead of feeding. Robertson's cases have all been treated at their homes, and good results have been obtained by feeding. The period of disability from the disease is materially shortened thereby. He gives raw eggs, broths, tea, coffee, chocolate, cereals, potatoes, oysters, etc. In the discussion Dr. H. A. Hare said that he favored more feeding in typhoid fever. Broths should not be given, as they are culture media. Soft eggs, starches, strained rice, etc., may be given. Digestive ferments should accompany them. The longer he practises medicine the more he is convinced that physicians are almost powerless in cases of hemorrhage during typhoid fever. It is almost wrong to bother the patient with internal drugs, as they do not reach the affected spot. One may be of service—Monsel's salt, made into hard pills and enclosed in two or three capsules.

Operation for Perforation in Typhoid Fever.—At the same meeting Dr. Robert G. Le Conte spoke of four points under this head: (1) Shock. Experience has shown that it is not advisable to wait for subsidence of shock. Operate immediately. (2) The incision. This had better be made directly over the most liable site of perforation—in the right semilunar line below the umbilicus. (3) Treatment of the lesion. When the perforation is not too large suture it, not wasting time to pare the edges of the ulcer. If too large to suture, available expedients are (a) plugging with omentum; (b) resection of the bowel; (c) artificial anus; (d) walling off with gauze. Le Conte prefers plugging with omentum or

walling off with gauze in ordinary cases, using the other methods only in exceptional cases. (4) Toilet. The directly soiled intestine should be brought out and cleaned by gauze and flushing, the other portions only by sponging. Flushing the abdominal cavity when the soiled area is limited is dangerous; when soiling is general, flush. Eleven cases have been operated upon at the Pennsylvania Hospital. Of these, eight were transferred from the medical wards at time of perforation and one recovered. The other three were admitted after perforation and operated at once, all recovering.

Hemorrhage in Typhoid Fever.—At a meeting of the Philadelphia County Medical Society, September 24, Dr. R. G. Curtin read a paper on the above subject, saying that this complication occurred in from three and one-half to eight per cent. of cases. He has never seen it in a child under six years. A point emphasized was that very often with a marked fall and subsequent rise of temperature some blood is passed by the patient. About 24 hours later more tarry blood is passed, supposed to be a second hemorrhage, when in reality it is blood retained in the bowel for that length of time. Some conditions that form a serious combination with hemorrhage are renal disease, marked organic heart-disease, hemophilia, tympanites and obstinate diarrhea and vomiting. Since hydrotherapy has been employed hemorrhage has increased, as also the mortality in hemorrhagic cases. This treatment drives blood to the interior, hence it is well to avoid it when there is a tendency to hemorrhage in any case. It should be used with great care during the third week of the disease. Treatment of hemorrhage consists in the use of ergot hypodermically and by the mouth, turpentine internally and externally (the latter better when sprinkled on flannel than in the form of stupes), opium, and oil of erigeron, cold to the abdomen. The last should be applied continuously instead of intermittently.

CHICAGO.

Election of Dr. Woodruff.—Dr. Thomas A. Woodruff has been elected Professor of Ophthalmology in the Chicago Eye, Ear, Nose and Throat College.

Vote of Thanks.—At the conclusion of the lantern demonstration a rising vote of thanks was tendered to Mr. Ball for his instructive, entertaining and scientific discourse.

Property Transferred to University.—The College of Physicians and Surgeons has conveyed to the University of Illinois the old West Division High School property at Ogden Avenue and Congress Street, which it acquired from the city last year. The consideration named in the transfer, the same as in the deed from the city, was \$186,000.

Notable Decrease in the Prevalence of Typhoid Fever.—The mortality of typhoid fever has fallen from 10.5 per cent. of the total mortality during the first week in September to 7.8 per cent. last week. The typhoid deaths for the three weeks of the month have been 55, 43 and 38 respectively, and although there were 18 more cases in the County Hospital at the close of the week, there is every reason to believe that if the precautions so generally enforced during the past six weeks be continued until cold weather sets in there will be nothing more than the usual seasonal increase of the disease during the remainder of the fall.

Commencement Exercises of the Illinois Medical School.—The Illinois Medical College held its eighth commencement on the afternoon of September 25. Dr. Frank Gunsaulus officiated, and the doctorate address was delivered by John Barton Payne. The announcement of the graduating class was made by Professor B. Brindley Eads, Dean of the College, and the degrees were conferred by the President, Dr. H. H.

Brown. A graduating class of 34 received diplomas. The valedictory was delivered by Dr. Arthur B. Cook. The annual banquet was given in the evening at the Auditorium Hotel. Dr. William F. Waugh acted as toast-master.

Visit of a Distinguished English Surgeon.—Mr. Charles B. Ball, Professor of Surgery in Trinity Medical College, University of Dublin, recently delivered the Lane Lectures at the Cooper Medical College of San Francisco, Cal. September 25 he arrived at Chicago, and in the evening by invitation showed numerous beautiful lantern-slides of diseases of the rectum. Stereoscopic photographs were taken during his surgical operations in Dublin by his son, and then subsequently rephotographed and colored with anilin dyes to bring out the salient features of each disease. There were projected on the screen beautiful slides of ulcer of the rectum, granulomata of the rectum, syphilitic disease of the rectum, syphilitic stricture, partial and complete prolapse of the rectum, cancer of the rectum, internal and external hemorrhoids, adenoma of the rectum, congenital sacrococcygeal tumor in a child, colloid cancer of the rectum, tubular stricture of the rectum, etc. He said the majority of cases of hemorrhoids were best treated and cured by the ligature, although the ligature method was regarded by some as ancient or primeval. However, he still clung to and advocated this method of treatment, as modified by himself, and had secured satisfactory results. The Whitehead operation had led to a great deal of trouble. In some cases a certain amount of incontinence, and in others stricture, had followed it. He had abandoned the Whitehead operation.

CANADA.

Canadian Medical Association.—At Montreal, September 16, 17 and 18, was held the 35th annual meeting of the Canadian Medical Association, which was by far the largest meeting ever held in its history. There were 325 physicians present from all provinces of the Dominion, and a dozen or more from the United States as guests. The meeting was held in the Medical Buildings of McGill University, and was conducted under the presidency of Dr. Francis J. Shepherd of Montreal. Immediately after the meeting was opened on the morning of the 16th, Professor Adami moved a resolution of regret at the recent death of the eminent German pathologist, Professor Virchow. The resolution was at the same time an appreciation of the great life-work of the leader among German pathologists. It was unanimously adopted. The meeting then divided into sections, Dr. Alexander McPhedran of Toronto presiding at the Medical Section, while Dr. O. M. Jones of Victoria, B. C., acted in a similar capacity in the Surgical Section.

Splenic Anemia.—Dr. H. A. Lafleur of Montreal contributed the first paper in the Medical Section. It embodied notes on a case of splenic anemia, the patient being also presented. A tumor extended from the lower ribs on the left side to the crest of the ilium, and there was a complete absence of mobility. In discussing this case, Dr. Osler thought it was a case in which the diagnosis was more surgical than medical.

Sanatorium Treatment of Tuberculosis.—Dr. J. H. Elliott, Superintendent of the Gravenhurst Sanatorium for Consumptives, contributed a paper on some further results in the treatment of tuberculosis. His report dealt with 555 cases treated at that institution during the past five years, an experience which has shown that almost all of the patients discharged "apparently cured" have remained perfectly well, while of those with "disease arrested," many

have progressed to good health at home by following the rules of life learned at the sanatorium. Dr. Osler discussed this paper and congratulated Dr. Elliott on the results he has obtained. Dr. Osler mentioned two important points which should be kept well in mind: First, early diagnosis; second, getting the patient as soon as possible under proper professional control. Dr. McPhedran also discussed the paper, emphasizing how to get patients to care for themselves at their homes. He also stated that he believed that the neighborhoods of sanatoriums are areas where tuberculosis is always diminishing. Following this was a paper by Dr. John Hunter of Toronto on pleurisy as associated with tuberculosis. The author described the manner in which the bacilli reach the visceral and parietal pleura, and further discussed diagnosis, prognosis and treatment.

Clinical Notes on Blood-Pressure.—Dr. A. E. Orr of Montreal contributed some clinical notes on blood-pressure in diseased conditions, investigations of which had been conducted on 400 patients in the Royal Victoria Hospital, Montreal. The normal pressure was found to range from 110 to 120. Then Dr. W. S. Morrow of Montreal gave a practical demonstration on the blackboard, and presented a living subject, illustrating the technic of recording the venous pulse.

A New Sign of Intestinal Paralysis.—In the Surgical Section special interest was shown in a symptom, not hitherto described, due to paralysis of the bowel in peritonitis, recorded by Dr. George A. Peters of Toronto. He has observed that, where the gurgling sounds due to the passage of gas and liquid in the bowels are absent from paralysis, the heart-sounds are invariably very plainly present over the whole abdomen. In intense cases, particularly in children, both inspiratory and expiratory breath-sounds may be heard.

Filariasis.—Dr. Alexander Primrose of Toronto reported a case of filariasis in a man who came from the West Indies with lymph scrotum, which was cured by operation. A large portion of the scrotum was removed, and thereafter the embryos entirely disappeared from the blood, and the inference was that the parent producing them had been removed by the operation. The parent worm was carefully studied by Dr. J. H. Elliott of Gravenhurst Sanatorium, and late of the Malaria Expedition in Algeria from the Liverpool School of Tropical Medicine; and a report of his investigations, along with drawings of the worm, formed part of the paper as contributed by Dr. Primrose.

Diseases of the Biliary Organs.—Nearly the whole of the morning session of the second day was devoted to a discussion on the disease of the gall-bladder and bile-ducts, which was led by Dr. McPhedran of Toronto, in a paper on medical diagnosis. According to him jaundice and the recurrence of an attack are the most characteristic symptoms of gall-stones. Dr. A. D. Blackader of Montreal spoke on the treatment of gall-bladder affections. The surgical diagnosis was introduced by Dr. James Bell of Montreal, who was followed by Dr. J. F. W. Ross of Toronto, in a paper on the surgical treatment. Dr. Ross expressed a lack of faith in the so-called medical treatment of gall-stones. He advocated drainage through Morrison's pouch, and laid great stress on the free use of gauze packing to prevent leakage into the peritoneal cavity. In gangrene and empyema of the gall-bladder he does not advise removal of the organ, but prefers opening, flushing and draining. Following in the discussion came Dr. George E. Armstrong of Montreal, who does not advise removal of the gall-bladder for stone in the cystic duct.

The importance of an early operation on the gall-bladder was the subject of a paper contributed by Dr. Dudley Allen of Cleveland, O., and as accurate diagnosis is often impossible, he advises exploratory incision, which he had often performed with gratifying results.

Foreign Bodies in the Appendix.—The next paper was on foreign bodies in the vermiform appendix. It was presented by Dr. James Bell of Montreal. In his experience the foreign bodies met with have been in two cases pins, in two cases seeds, in one case wood fiber, in one case gall-stones, and in another case a fish-bone.

Consulting Staff in Hospitals for the Insane.—Dr. Stuart Paton of Baltimore, Md., advocated wards in asylums for the insane for the proper treatment of acute cases. He considered also that every asylum for the insane should have a consulting staff of practitioners, as other hospitals have.

The Pathologic Prostate.—Dr. Alexander Hugh Ferguson of Chicago read a paper on the pathologic prostate and its removal through the perineum. In performing this operation Dr. Ferguson uses a prostatic depressor introduced into the urethra in such a manner as to press the prostate down into the perineum. The finger of the left hand is passed into the rectum as a guide, and then he makes one bold incision through the perineum down through the prostatic capsule. Following this paper Dr. George E. Armstrong read a paper on the surgical treatment of enlarged prostate, exhibiting a specially constructed suprapubic vesical speculum, devised by himself, with a lateral opening which allows the prostate alone to come well into view in the speculum. He reported seven cases successfully operated upon.

Chauvinism in Medicine.—At a general session held in the evening of the second day Dr. William Osler delivered the Address in Medicine, which was a scholarly and able effort. Its title was "Chauvinism in Medicine," of which there were four varieties; namely, national, provincial, parochial and individual. He strongly advocated Dominion Registration as advanced by Dr. Roddick, and hoped that no one province would offset the good work Dr. Roddick had already performed in this direction. He advised the profession to beware of the drummer of the drug-house, and spoke of charity in the profession: "If you cannot speak well of your brother, keep silence."

Election of Officers.—President, Dr. W. H. Moorhouse of London, Ont.; Treasurer, Dr. H. B. Small of Ottawa; General Secretary, Dr. George Elliott of Toronto. London, Ont., was selected as the next place of meeting.

GENERAL

A Medical Family.—Four daughters of one Iowa family are practising physicians. Drs. Jennie S., Emma L., and Jessie A. Braunwarth are established in Muscatine, Ia. Dr. Anna M. Braunwarth is associated with Dr. Henry T. Byford of Chicago.

Quarantine Methods in the Philippines.—Determined warfare by the quarantine officer against rats has resulted in the total extermination of bubonic plague in Manila. Despite the fact that the plague has been raging in Hongkong, Amoy and other Chinese ports, there is little trace of it in the Philippines. In his official report Surgeon Perry says: "On December 17, it having previously been demonstrated that the rats in Manila were affected with the plague to the extent of from one and a half to two per cent., and in order to eliminate this factor in spreading the disease to island ports, and to assist the Board of Health in the crusade for the extermination of these animals, I ordered that all vessels sailing from Manila to the United States or

island ports should be disinfected with sulphur in order to destroy the rats on board. This disinfection was also practised on the Hongkong boats for the purpose of adding further protection to Manila."

Serum Treatment of Scarletina.—The conference of German doctors which met last week at Carlsbad has announced the discovery of a new cure for scarlet fever. Dr. Moser, the assistant physician at St. Ann's Hospital for Children at Vienna, is the discoverer of the new serum. During the last two years he has tried it on 400 patients. The mortality has decreased to between eight and nine per cent. The rate at the other hospitals is double this. The conference has been informed that the Government will vote a considerable sum of money in order that the serum may be made in large quantities and distributed to all the children's hospitals in Vienna.

Obituary.—Dr. Edward Miller Cameron died last week at his residence, 22 West Forty-seventh St., New York, aged seventy-three years. Dr. Cameron was graduated from the College of Physicians and Surgeons of New York in 1853. He was a member of the New York Medical Association and of the Academy of Medicine, and Consulting Physician of Trinity Hospital. He was also a member of the New York Athletic Club.

CORRESPONDENCE.

A NEW METHOD OF VACCINATING.

To the Editor of the MEDICAL NEWS:

DEAR SIR—Acting on the principle that when we learn something new it should be communicated to be shared as common property among the profession, I send you the following description of the technic of vaccination.

Such a simple operation as that of vaccination admits of endless variations. The process to be described is recommended by its simplicity, asepticism, efficiency and cheapness. The only instrument required is a fairly stout needle, sterilized by passing it through the flame of a spirit-lamp, or, if that be not at hand, through the flame of a gas-jet. In the latter case the carbon which is deposited should not be wiped off, as it is aseptic, and its removal might entail sepsis. After a needle has been used it should be destroyed. After washing of the selected part with soap and water it should be washed off with sterilized water that has been allowed to cool, and then rubbed briskly with a piece of aseptic surgical lint until the dilated capillaries give a ruddy glow to the skin. No antiseptics are to be used. The operation is commenced by directing the patient to blow some of the lymph out of the capillary tube on to the part selected and prepared. Through (most important) the drop of lymph thus deposited the skin is scarified by rapid criss-cross movements of the needle-point. The scarification should not result in more than the slightest capillary oozing.

Advantages claimed for this method are: Asepticism—for each operation a new and freshly sterilized needle; relief from the necessity of carrying around "points" and scarifiers, and of their tedious sterilization; the fact that the blowing out of the lymph by the patient himself can result in nothing worse than auto-inoculation, and that this mode appeals to the æsthetic sense; that by stroking the skin through the drop of lymph every stroke is more effective, in that each breach of continuity in the skin is inoculated before resulting capillary oozing occurs, and that each stroke prepares the site for and deposits the lymph simultaneously. In the old method, where scarification preceded inoculation, the resulting hemorrhage antagonized successful inoculation in two ways: (a) By blood-clot, if the oper-

ator was slow; (b) by lavage, the hemorrhage resulting from the scarification washing away the lymph before the latter could be deposited.

This method of vaccination is not original.

J. R. CLEMENS, M.D.

St. Louis, September 22, 1902.

TRANSACTIONS OF FOREIGN SOCIETIES.

GERMAN.

IMPLANTATION OF THE HUMAN OVUM IN THE UTERUS—
A NEW OPERATION FOR THE REMOVAL OF TUBERCULOUS
GLANDS FROM THE NECK—HEMORRHAGE INTO THE
ADRENAL BODIES—SEASICKNESS—OBSERVATIONS ON THE
HEARTS OF YOUNG MAMMALS.

The proceedings of the various German scientific and medical societies have their usual merit and widespread interest. Among a surfeit of valuable matter the following selection has been made as most worthy of the attention of our readers.

HENGGE, at the Greifswalder medizinischer Verein, June 7, 1902, read a paper on the implantation of the human ovum within the uterus, bringing out the following points: He discussed and demonstrated microscopical preparations which showed the human ovum one week after impregnation. The egg was in the mucous membrane of the uterus, firmly imbedded, much after the manner demonstrated by Spee for the same condition in guinea-pigs, and again by Peters for the human being. The ovum showed a thick envelope composed of ectoderm and trophoblast, in which the earliest signs of development of the chorionic villi and of the intervillous spaces may be seen. About the ovum the early elements of a formation of the decidua are also in evidence. This ovum was accidentally discovered during a microscopical examination of the products of a curetting.

STEGMANN, at the Verein Freiburger Aerzte, May 30, 1902, read a paper on and gave demonstrations of a new operation for the removal of tuberculous glands of the neck as follows: Tuberculosis of the cervical lymphatic glands is usually the first localization of this disease within the human economy, because these glands are commonly the first wall of defense against the invasion of tubercle bacilli, which reach them from the inspired air in the mouth and pharynx, whence they are taken to the glands themselves by the small lymphatic vessels. Stegmann has frequently noted that on the same side as the glands themselves there often appears tuberculosis of the apex of the lung. For this reason it is advisable to remove affected glands at the earliest possible moment in order to prevent a downward spread of the disease into the lung. Operation upon the cervical lymphatic glands is accepted by the public and recommended by the medical practitioner, as a rule, only after a great number of more or less scattered glands within this region have become affected, or when this condition arises as a recurrence from previous disease of a few glands. The operation which he recommends has been practised by him for a number of years with the best cosmetic and therapeutic results, and at a time when such authorities as Dower recommend it. It consists in the formation of a skin-flap through which it is possible to lay bare the whole region of the neck. The skin-incision begins a little below the border of the lower jaw, quite close to the apex of the mastoid process, passes in a gradual curve backward to the anterior border of the trapezius muscle, and finally ends just above the clavicle. This skin-flap is then freed from all its attachments down to the base, the superficial glands removed, and in the presence of disease in the deeper glands the sternocleidomastoid muscle is divided temporarily through its middle, and the internal jugular

vein, which it so frequently walls in on the outer side, is dissected free from the diseased glands. By this incision the fossa above the clavicle is entirely approachable. For the cleaning out of the space below the jaw care must be taken not to bring about paralysis of the mouth by dividing the nerves of this region, which may readily happen when the external maxillary artery and vein are divided. Near the natural point for this division there is the union between the first cervical nerve and one or more branches of the facial nerve, especially the marginal branch. In one case where this accident happened with the author he divided this anastomosis on the opposite side and thoroughly corrected the cosmetic error. He thinks, moreover, that after a number of years such an error in the position of the mouth would probably correct itself anyway. He then presented to the society a patient on whom the operation had been done with the very highest result, cosmetic and therapeutic.

SIMONDS, at the Biologische Abtheilung des ärztlichen Vereins in Hamburg, June 17, 1902, read a paper on hemorrhage into the adrenal bodies, from which the following points are briefly taken: He bases his observation on 12 patients of his own, and on various references to the same disease in medical literature. Small ecchymoses into the adrenal bodies are very common indeed in the various infectious diseases, and are therefore in the circumstances to be considered properly toxic in origin. Hemorrhagic infarcts into both adrenal bodies often occur with symptoms analogous to peritonitis, and usually are followed by death, but these symptoms may totally fail. Hemorrhages into these organs may result in the formation of hematomata of sufficient size and number to demand operative interference. Such hemorrhages usually occur in the following conditions: Traumatism, especially in the newborn; hemorrhagic diathesis; thrombosis of the veins which drain the glands about the bodies, and embolism of the capillaries by bacteria. The last two named are by all experience the most common causes. The thromboses may invade the main trunk or the chief branches of the veins, and on one or both sides. They should be regarded chiefly as marantic in origin, and are most common in individuals suffering from chronic disease. They are favored by the peculiar arrangement of the veins from these organs. A primary thrombosis in this region has not yet been described. Emboli caused by bacteria, and resulting in bleeding, have been found in cases which showed no signs of septic infection. For this reason when such cases occur it will be advisable to examine the organs directly for bacteria. Unilateral bleeding may by resorption of the blood be followed by restoration of function.

L. FISCHL, at the Verein deutscher Aerzte in Prag, February 21, 1902, discussed the time-honored subject of seasickness, stating that he had made observations as to the possible cause of the affection in upwards of 300 cases, which even included several animals. As a therapeutic measure for preventing the condition, he found morphine by injection or the administration of bromides effectual. From the fact that in seasickness the vessels of the retina have been found in a state of contraction, he tried putting the patient in a position with the head low, then bandaging the extremities with elastic bandages. But these procedures had unfavorable results in severe cases. He considered hard, dry food the proper diet.

G. SOMMER, at the Physikalische medicinische Gesellschaft zu Würzburg, June 20, 1902, read notes on the following observations during the experiments on the hearts of young animals: When very young, chiefly new-born, cats, rabbits and dogs were killed under chloroform, and the chest being opened to the air, the

heart again began to beat after a short time. If the great vessels were tied off and the heart removed and thus suspended in a 15 or 20 c.c. mixture of seven-tenths of one per cent. sodium chlorid, to which one or two cubic centimeters of peroxid of hydrogen had been added, and kept at the temperature of an ordinary living room, the movements of the heart continued for many hours, in some cases for 31 hours, until they finally disappeared entirely. These experiments showed that without blood streaming through the heart or great vessels from the heart, the young organ will continue to beat for a long time in a medium containing oxygen. In agreement with the statement of most observers in literature, he has found that first the left ventricle, then the right ventricle, followed in order by the right and left auricles and the vena cava superior, passed into action. When the pericardium is stripped off the heart, this organ springs forward as if from a constraining membrane, and the order is reversed and the action of the left ventricle appears to be the close of the cardiac cycle.

BYWAYS OF MEDICAL LITERATURE.—IX.

PLANTS AND INVALIDS.

ONE of the English popular weeklies furnished in a recent issue some valuable hints as to the plants whose presence in the sick-room is liable to affect invalids unfavorably. That the progress of their patients may be thus influenced it will be very useful for physicians to bear in mind. So little serves to affect certain sensitive nervous organizations that the unconscious retention of an obnoxious plant may mean all the difference between comparative ease and trying, wearisome discomfort. Some of the plants for which people may have susceptibilities are utterly unsuspected of any such influence. Hence the necessity for special care and watchfulness in the matter.

The majority of people think that the tulip has no fragrance, and this is true of a great number of the variegated kinds. The old single-colored varieties, however, particularly those of a deep crimson hue, have a powerful odor which is dangerous when inhaled. This odor is of saffron flavor, and affects many people in a very peculiar manner. If breathed deeply it has the effect of producing light-headedness, which continues for some time, causing the sufferer at times even to do and say all manner of remarkable and ridiculous things. Its influence often lasts for an hour or two, and is followed by deep depression. Another common flower whose odor has evil properties is the poppy. This is doubtless due to the quantity of opium which the blossom contains. Many individuals, especially young ladies of high-strung temperament, complain of the drowsy sensation which comes over them after walking through a field of these flowers. Afterwards such individuals may suffer from violent headaches and a disinclination to exercise. In Asia Minor, where the poppy is grown in vast quantities for the purpose of extracting the drug, tourists are frequently incapacitated for many hours after inspecting a poppy plantation, and two cases of death last year among English tourists are said to have been traced to this cause.

All flowers grown from bulbs are unpleasant in rooms where there are invalids. Although bunches of flowers are customarily taken as presents to patients, such blooms as hyacinths, lilies-of-the-valley, tuberose, and even daffodils and narcissus, should be carefully kept out of the sick-room. The perfume of these flowers is likely to be especially irritant to many more people than is ordinarily imagined. Something of this effect may be due to imagination or to autosuggestion. Often

the patients themselves are utterly unconscious of such evil influence, and it is only when exclusion of the flowers from the sick-room is followed by absence of certain hitherto annoying symptoms that the rôle played by the perfume becomes clear.

MEDICAL APHORISMS.

Perhaps the medical editor's appeal to "boil it down" is at least getting into one ear of his contributors without getting out at the other. At any rate, physicians are beginning to express some of their thoughts on medical practice and ethics, and even—heaven be praised!—their advice to their juniors, in short, aphoristic sentences, some of which are almost worthy of a place beside the concentrated sayings of the wise men of Greece. The aphorisms by Dr. Rockwell of Worcester, Mass., which appeared originally in *American Medicine*, having been copied by the *London Practitioner*, are now finding their way rather extensively into the medical journals of this country. Perhaps, like the California wine that is said to come back to us from France with French labels, they are improved by the twice-taken trip across the Atlantic, but this we may be allowed to doubt. Some of the aphorisms are certainly well done. For instance, these:

"Find out who 'runs' the family and then you 'run' her." This discovery will prove of great value. "The most important thing in therapeutics is the knowledge of what not to do." "The most dangerous member of society is the doctor who never makes a mistake." "Possess yourself of an irresistible, indestructible optimism. It is the keystone of the arch of success." "Don't tell your neurasthenic there is nothing the matter with him. It is not the truth." "Never give up a patient."

Dr. Rockwell evidently does not agree with the popular notion that a physician can only be successful if he applies himself exclusively to his profession, for one of his most striking aphorisms is: "He can not obtain the highest professional success who knows only medicine." Since so many physicians have succeeded in doing such things as to write successful novels, apply themselves to science with distinction, write occasional historic sketches, and do magazine articles very creditably, the old idea of a doctor always over his cases is going out. There are not wanting those who, like Dr. Rockwell, now insist that to do medicine well a doctor must obtain breadth of view by doing something else very well as a sort of a recreation of mind.

Another notable set of medical aphorisms appeared recently in the von Leyden *Festschrift*, to which we called attention some time ago. These are contributed by Dr. Buttersack of Berlin, a member of the staff of the German Army, and some of them are worthy of a line or two in the commonplace-book of every physician. For instance: "Faith makes us happy, but the will makes us healthy." "Not knowledge, but self-discipline raises men to a higher plane of existence." "Science is sacred. It takes only such offerings as come from a pure heart." "Not only with the brain, but also with the heart must a physician strive to reach the heights of his profession. Some of the aphorisms are of more practical character: "The rifle does not make the marksman, nor the laboratory the investigator." "The natural scientist and the physician must first of all protect themselves against autosuggestion." "Even the universal specialist is far from being the true physician."

KEATS AND KIPLING, MEDICINE AND POETRY.

In the August number of *Scribner's Magazine* the opening story, by Rudyard Kipling, is of special interest to physicians and those engaged in the handling of drugs generally, because of its subject. The hero of

the tale, a young drug-clerk, is a victim of tuberculosis, and occasionally spits blood of the bright arterial hue that by the novelist at least is taken to mean inevitable death. He is in love with a young woman named Fanny Brand, who possesses many of the physical attributes that tradition ascribes to Fanny Brawn, the beloved of the poet Keats. During a dream-like state brought on by a decoction prepared by a friend, the drug-clerk is supposed to write poetry that closely resembles some of the effusions which Keats poured forth to his lady-love. As the story is by Kipling, it is easy to understand that the subject is well worked up, and the symbolism introduced by the matter-of-fact account of the wireless telegraphic experiment in the room back of the drug-store helps to make the tale an impressive artistic whole.

At the end one is inclined to wonder whether Mr. Kipling himself really believes in the doctrine he would seem to inculcate, that poetry is only the result of a definite set of emotions under definite circumstances, and is not dependent on the genius of the poet for its expression. Perhaps the most interesting feature of the story for many physicians will be the fact, too little known, that the poet Keats was a medical student and spent his last years in England in a London hospital. Dr. Benjamin Ward Richardson, in an article in the *Asclepiad*, told the sad story of the young poet-physician and his unfortunate love-affair. The article has been incorporated in the volumes called "Disciples of Æsculapius," published recently by Dr. Richardson's daughter. It has always seemed to the present writer that to anyone attentively reading Keats's letters as edited by Houghton there would inevitably come the conclusion that the medical student Keats must have lived rather a wild life. There is more than one hint that he felt that he was paying for this irregularity of life by his physical suffering and the early death that he foresaw. There is even the faint suspicion that there was some actual physical ailment, the recurrent symptoms of which kept tugging away at his conscience. Poor Keats! He was not twenty when he went through the life-experience he bewails, and with his passionate poetic nature there may have been much that was unethical, but surely little that was very blameworthy. Perhaps the weakest part of the substratum of Mr. Kipling's story is the fact that the physical being of Fanny Brawn must have had very little to do with inspiring Keats's ardent verses. It was with a poetical, idealized Fanny that Keats was in love, and that rather matter-of-fact young person, the real Fanny, seems never to have appreciated the depth of the sentiment which she aroused in the young poet's heart.

PECULIAR DERIVATION OF FAMILIAR EXPRESSIONS.

Any physician who has had among his patients mild and gentle hatters, with no marked tendencies to mental disequilibrium or undue irascibility, has been inclined to wonder what could possibly have been the original meaning and the special derivation of the expression "as mad as a hatter." In an article in the *New Liberal Review*, of London, for September, Mr. J. Churton Collins, a well-known English literary man, supplies data for the desired explanation. Originally the expression seems to have been "mad as an adder." A later form of it probably was "mad as a natter." The old English verb "to natter" was about equivalent to our expressive modern "to nag." A "natter" was a querulous person, always in irritable mood, and liable to explosive periods whenever there was any additional annoyance, however slight. The transformation of the expression into "mad as a hatter" was easy, and the mechanism of it can be understood better if we bear in mind the Eng-

lish tendency to drop the aspirate in such words as hatter when the form of the article before them became "an" instead of "a." Mr. Collins has found not a few proverbial expressions that have become modified in a similar way in the course of time. For instance, the puzzling expression, "He could not tell a hawk from a handsaw" loses its character of a riddle when we find that handsaw was originally "hernshaw," an old English term for heron.

THE GROUSE-DISEASE IN SCOTLAND.

During certain seasons the grouse on the moors in Scotland are attacked by a disease that carries them off in large numbers and makes the next autumn shooting very disappointing. As grouse-shooting is an indispensable function of English society life, the grouse-disease has attracted much more general attention than would otherwise have been the case. The study of its epidemicity and distribution has illustrated a number of biological principles in a striking way. For a long time the disease was thought to be air-borne, but the theory was given up because certain parts of the shooting district were always spared. Then it was thought to be due to something in the water, for the birds dead of the disease were found near the watercourses, but it was soon realized that in their illness the birds probably craved water. Prof. Klein, the English bacteriologist, examined the blood of birds dead from the disease, and found a bacterium that seemed to be the specific cause. The disease, however, was not conveyed by the digestive tract, since the feeding of healthy birds with contaminated material failed to give it to them.

Recently a new theory of origin has been suggested somewhat analogous to the mosquito theory of malaria. In the September number of the *Fortnightly Review* Mr. G. Teasdale-Buckell attributes the spread of the disease to midges, insect parasites that, after feeding on the bodies of grouse dead from the disease, find a new host in previously healthy birds. It has been noted that in years when the grouse-disease is severe the young birds have scanty covering for the legs. The absence of feathers is supposed to provide favorable opportunities for the attacks of the midges. Thus even for the birds of the air the development of nosology departs from the idea of infection through such elements as air or water, and finds the distributing factor to be a living agent.

A very curious feature of the spread of the disease is that it is mainly effected by the presence of weakling and ailing birds. Some time ago it was resolved to foster the increase of the Scotch grouse by getting rid of certain bird-enemies that preyed on them. A crusade was undertaken and after a time the grouse-enemies were so reduced in number as to be practically eradicated. Instead of an increase of the grouse, during the following season they were fewer than ever. It would seem that the strong and healthy grouse, capable of resisting disease successfully, were also able to escape their enemies. Delicate birds, however, and those suffering from contagious disease of any kind soon fell victims to the birds of prey. In this way the distribution of infectious disease over a wide area was prevented, since very few occasions for the spread of contagion were allowed. This conservative element of the struggle for life had been entirely missed by the would-be benefactors of the grouse, who thought in ridding them of their enemies to benefit the race. One is tempted to wonder how many of the delightful theories for the improvement of the human race might be wrecked in practical application by finding that they interfered with great conservative factors which have been unwittingly at work for true development.

BIOLOGICAL MYSTERIES OF PLANTS.

There was a time when botany was studied exclusively as a branch of medicine. Now physicians are likely to know little of it, and thus to miss the pleasures of an extremely interesting branch of science with many relations to medicine. Though the plants form the lowest order of living things, they contain most of the mystery that always is found in the presence of life, and the very realization of their comparatively simple organization, yet complex physiology and obscure chemism, gives a proper sense of diffidence in approaching the problems of higher life and its mysteries.

In the September number of *Current Literature* one phase of the still insoluble problems of plant-life is brought out very forcibly. One of the most marvelous mysteries and as yet unexplained phenomena connected with plant-life is the power of producing medicinal and poisonous secretions from the earth and air in which the plants grow. The mind stands absolutely benumbed before the fact that, of a series of plants growing in the same soil, supplied with the same water, surrounded with the same air, performing the functions of their life under identical conditions, this shall minister food for man's natural wants, that provide him medicine for his abnormal state, another be able to afford him unspeakable pleasure with its delicious perfume, another disgust him with its fetid odor, and still another deprive him of life if he tastes its juices. Indeed, vegetable biology has before it one of the most perplexing questions of the universe, when it is asked why wheat produces "the staff of life," cinchona its valuable quinine, stephanotis its rich perfume, skunk-cabbage its stench and nux vomica its deadly strychnine. Human experience has empirically tabulated many of the results of this mysterious function of plant-life, and the useful, the noxious and the innocuous lists are growing every day.

VIRCHOW AND EVOLUTION.

Because of his wide knowledge of biological science, from the minutiae of cytology to the important problems of anthropology, very few modern scientists were better situated than Virchow to judge of the value of evolution as a working hypothesis. Curiously enough, in the midst of the evolutionary movement he never looked on it very favorably. Students who remember his deprecatory references to it in his lectures will have gathered that he was impatient at the vogue of the theory. He seemed to resent the acceptance of a doctrine for which there was so little definite proof and the conclusions of which were so much wider than any premises that could be formulated with assurance. Virchow always insisted that on cytology and the investigations of the possibilities of modification in cells must ultimately depend the acceptance or rejection of evolution.

Virchow insisted that patient observation in this matter, and not theories, however apparently satisfactory or brilliant, must prove the ultimate criterion of truth and the touchstone of definite advance. His position in this matter is very well brought out by Prof. Franz Boas, who occupies the chair of anthropology at Columbia University, in an article on Virchow as an anthropologist, in *Science* for September 19. Virchow's opinions have always proven such safe beacon-lights in medicine that his attitude towards evolution, and the reasons therefor may well be accepted as a precious legacy, not without its lesson of guidance for other subjects besides that which it immediately concerns.

Virchow demands that researches on the mutability of cells and groups of cells must be carried out, and he declines to speculate on the origin of species until through researches on tissues a sound foundation has

been laid. Sometimes it would seem as though Virchow doubted the scientific value of the theory of evolution. We do not think this was the case. He merely emphasized again and again the methodological point of view, that the understanding of the forms of the body must be based on a knowledge of the forms, mutual relations and functions of the cells, and that therefore the question of mutability must be settled by researches on these lines. Furthermore, his position rests on the general scientific principle that it is dangerous to classify data that are imperfectly known under the point of view of general theories, and that the sound progress of science requires of us to be clear at every moment as to what elements in the system of science are hypothetical and what are the limits of that knowledge which is obtained by exact observation. To this principle Virchow adhered steadfastly and rigidly; so much so that many an impetuous student has felt his quiet and cautious criticism as an obstacle to progress. On this account he has suffered many hostile attacks, until generally the progress of research showed that the cautious master was right in rejecting the far-reaching conclusion based on imperfect evidence. There are but few students who possess steady enthusiasm for truth that enables them to be always clearly conscious of the sharp line between attractive theory and the observation that has been secured by hard and earnest work.

SPECIAL ARTICLE.

RECENT PROGRESS IN THE STUDY OF THE STOMACH.¹

BY G. LINOSSIER,

PROFESSOR OF MEDICINE AT LYONS, FRANCE.

SUCH a vast number of publications relating to the stomach have appeared that it is only possible to present the noteworthy points of each and to weigh the evidence for and against new ideas.

I. PHYSIOLOGY.

This year the surgeons report some 20 cases of recovery following total gastrectomy, and the operators, noting the satisfactory condition of their patients months later, invariably add that the possibility of living without a stomach is proof of the small importance of this viscus. But the success of a total gastrectomy no more proves the uselessness of the stomach than survival of animals after ligation of the pancreatic duct proves the uselessness of the pancreatic secretion. It merely shows that the functions of the stomach, like those of many other viscera, may, in case of necessity, be assumed by some other organ; and it indicates a superabundant provision of nature for carrying on the important function of digestion in case of disability of any one part of the digestive tract.

A partial assumption of the pancreatic functions when the pancreatic juice is prevented from reaching the intestine is shown by Gegalow, for the secretion of gastric juice is increased, and a proteolytic ferment appears in the bile.

Most physicians have believed that the only digestion that takes place in the stomach is that of albumin by pepsin, the starch-digesting action of the ptyalin from the saliva being at once inhibited by the acid gastric juice. But in the stomach the acid is, in great part at least, in albuminoid combination, and its action is thus much weakened; and the starch of a test-meal at the end of an hour is normally mostly digested. It is only in hyperchlorhydric conditions that salivary di-

¹ Translated and abstracted by W. A. Bastedo, M.D., from *Archives Générales de Médecine*, January, 1902.

gestion seems interrupted; and the digestive discomforts following the ingestion of starchy foods in these cases testify to the usefulness of the ptyalin action in normal conditions.

Müller has found that after a meal of bread or of boiled meal, 60 to 80 per cent. and sometimes even all of the ingested starch is dissolved. This solution is very rapid, and is much advanced by the time the gastric juice has acidity enough to check the ptyalin action. Even in hyperchlorhydric some starch-digestion is accomplished before the acid overcomes the ptyalin, so it is not necessary to eliminate all starch from the diet of this class of patients.

Volhard has just discovered a lipase in the stomach. On evacuating the stomach after the ingestion of an emulsion of yolk of egg and sugar water, he found 70 per cent. of the fat saponified, while with unemulsified fat no saponification takes place. The agent is apparently a ferment associated with pepsin and the rennet in the mucous membrane of the pig's stomach. Within the period, then, during which the food remains in the stomach, a general digestion of albuminoids, fats and carbohydrates goes on, and, in addition, certain insoluble mineral salts are dissolved in the acid medium. The stomach also secretes the rennet or lab-ferment, a substance which one would not expect to find in such abundance in adults, or in animals other than mammals, if its action were limited to the curdling of milk. Danilewsky and Okonew consider it the agent in the reconstruction of peptone into albumin, an opinion confirmed by Lawrow, and lately by Saw Jalow. An interesting fact is that, just as all the different starches and sugars after digestion become the same "glycogen," so do all the albumins, after their change to peptone, become retransformed into one definite form of albumin.

That absorption by the stomach is limited is well illustrated by a case of Lépine's: A man during an attack of indigestion took 15 c.c. of Fowler's solution; yet, though it was not rejected by vomiting for two and a half hours, he showed no poisonous symptoms. Lépine supposes that the pylorus was closed, as is often the case in indigestion, so that the poison did not reach the intestine, where it would have been absorbed. At the same time, some absorption does take place, and this function is promoted by certain substances, notably alcohol. Even fat is absorbed, for in calves killed two hours after sucking Schilling found in the stomach-wall and leucocytes of the omental lymph-nodes numerous drops of fat not found in animals killed fasting.

The large number of researches on the action of dietetic or medicinal substances on the gastric juice ought to furnish clinical guides for the administration of food and medicine to the dyspeptic. But the results are often contradictory and inconsistent with clinical facts. Such researches are of great complexity, as one may judge when one recalls the still unsettled dispute as to whether the much-studied and much-used sodium bicarbonate is a stimulant of secretion, a depressant, or both, according to circumstances, or, if its action is largely due, as Reichmann has averred, to the water in which it is dissolved.

Experiments must leave out many factors which are present in clinical conditions. For example, in studying the comparative action of two aliments on the gastric secretion, an analysis of the stomach-contents, taken a definite time after the ingestion of each, would give no precise idea of the action of either; for if the aliments excited the same secretory elements, but one more rapidly than another, they would appear to excite secretion differently. Again, the action of a substance on the stomach of an animal may be quite different from its action on the human stomach. Besides, food acts

on the gastric juice through a series of different mechanisms. As it passes through the mouth it induces a "psychic secretion" depending on taste, odor, etc.; in contact with the stomach-walls, it excites the regular secretion; passed on to the intestines, it has a reflex influence, and when absorbed it can still affect the gastric juice through the blood. Carried directly into the stomach, boiled meat or egg-albumin does not produce any secretion whatever, and may remain undigested for hours; yet, eaten regularly, these foods stimulate the psychic secretion; the gastric juice thus secreted changes some of the albumins to peptones; these peptones, in contact with the gastric mucosa, provoke the normal secretion, and the food is digested. If, on the contrary, the foods are introduced by mouth, but by an esophageal fistula are prevented from reaching the stomach, the psychic secretion is formed, but the failure of the food to come into contact with the gastric juice and mucous membrane of the stomach results in an action far from normal. And so experimental digestion may be quite different from that in ordinary conditions of human alimentation.

When an animal eats a heavy meal so as to exhaust the gastric mucosa of its pepsin, more pepsin can be secreted only in the presence of "peptogens," substances which transform the propepsin of the glands into active pepsin. The most energetic of these peptogens are dextrin, meat bouillons, raw meat, bread and cheese. The introduction of a non-peptogenic food, e.g., white of egg, into a stomach exhausted by previous digestion, excites secretion of a juice which is acid, but non-peptic. If one adds a peptogen the juice becomes charged with pepsin.

Pawlow finds that certain substances have a "succagogue" action, that is, increase the total production of gastric juice without pepsin. Most substances are both succagogue and peptogenic. Alcohol is purely succagogue; inulin and glycogen, purely peptogenic; dextrin more peptogenic than succagogue, and Liebig's extract more succagogue than peptogenic. The succagogue action disappears (except in the case of alcohol) when the food is administered by rectum, while the peptogenic action remains. So the former action is probably local or reflex, while the latter takes place through the blood. In these studies several investigators have estimated the pepsin by the digestive power of the juice secreted; a fallacious method, because a gastric juice rich in pepsin can have almost no digestive power if it contains little or no acid, while a juice rich in acid with very little pepsin can dissolve considerable albumin. One must not forget, in studying digestive functions, that there is a natural limit to the solution of digested substances, independent of the quantity of acid or pepsin present.

Alcohol is generally supposed to owe its stimulant effect to direct action on the mucous membrane. But Frouin, Molinier and others have found that, even when administered by rectum, there follows a large production of hyperacid gastric juice free from pepsin.

Théohari and Babes obtained from prolonged exposure of the mucosa to absolute alcohol, at first a secretory excitation, then hyperchlorhydria. Animals killed in the cachectic period of alcoholism had interstitial inflammation of the mucosa, absence of border cells, and transformation of the chief cells into mucus cells.

Sokolow reports that hydrochloric acid retards the secretion of gastric juice, while lactic and butyric acids hasten it; but Mathieu claims that lactic acid retards secretion.

Schreuer and Riegel have compared an ordinary meal with the same meal mixed with saliva and intro-

duced through a stomach-tube. In the absence of mastication secretory excitation was constantly less.

Following the statement that the gastric secretion is diminished by sweating, Edel and DuMesnil, independently, have shown that the hot-air bath has no constant action on stomach secretion.

Simnitzki has found a constant augmentation of gastric juice, even up to 50 per cent., following ligation of the common bile duct. In several cases of jaundice he has found the same increase, but not in catarrhal jaundice, on account of the inflamed condition of the mucosa.

The closure of the pylorus is effected by contact of hydrochloric acid (Hirsch, Von Mering and others) or fatty foods (Lintvarev) with the duodenal mucosa. White of egg, sugar, bile and pancreatic juice do not affect the pylorus. According to Chemiastine, evacuation is facilitated by a special secretion of the pyloric portion, which takes place only during the very short time in which the food is in the pyloric antrum.

Frouin notes that sodium chlorid produces in a dog increase in the quantity of juice secreted and in its acidity, without change in the amount of pepsin.

II. SYMPTOMATOLOGY.

In 1890 Einhorn proposed in certain cases to obtain the gastric contents by means of a little bucket on the end of a silk thread. He now proposes to estimate the hydrochloric acid by diluting one drop of stomach-contents with one, two, three, four or more drops of water till the mixture just fails to redden paper impregnated with dimethyl-amido-azo-benzol. One drop of normal gastric contents one hour after an Ewald test-meal requires three to six drops of water. If less water is enough the acid is diminished; if more water is needed the hydrochloric is in excess. This method is useful where it is impossible to obtain more than a few drops of gastric contents, or where the burette and soda solution are not handy.

Fremont finds the total chlorids in a dog's gastric juice to be constant no matter what the proportion of hydrochloric acid, but Soupault observes that this constancy does not exist in human pathological states. In a healthy man the total chlorids are .31 to .33 per cent., in hyperchlorhydria, may reach .4 per cent., and in hypochlorhydria may fall as low as .225 per cent. This proportion is less vacillating than that of the acidity. Mathieu considers an increase in chlorids with normal hydrochloric acid as suggesting a tardy hyperchlorhydria, or as indicating that the stomach was not empty when the test-meal was taken.

Hypochloruria, when marked and constant, is significant of a grave degenerative lesion of the gastric mucosa.

Queirolo and Landi have proposed to delimit the stomach by the introduction of a small bladder on the end of a tube which at its outer end is bifurcated, one branch bearing a stop-cock and the other connecting with a Marey's registering apparatus. Air is blown in so as to distend the bladder slightly, and the stop-cock closed. Now, light percussion on the abdomen moves the stilet if performed over the stomach, but not if only over the intestine beyond its border. Sabrazès and Falières have verified the value of this process, and find the most suitable pressure in the balloon to be three or four cm. of water. With too high pressure the movements of the stilet are scarcely perceptible.

Bouveret notes a new sign of pyloric stenosis which he calls "intermittent gastric tension." With the patient lying down and relaxed, the left side of the epigastrium appears more prominent than the right, the lower limit of the asymmetrical tumefaction being well above the umbilicus. On light palpation this region

gives a feeling of resistance like that from a moderately inflated balloon. During the palpation the swelling disappears and the two sides become symmetrical; then the swelling reappears and again disappears, and so continues off and on for a variable period after eating.

For determining the motility of the stomach the best method is that of Leube, in which by a stomach-tube it is ascertained whether or not the stomach is quite empty seven hours after a copious meal. Schule's method of extracting the contents one hour after a fixed meal, desiccating in air and weighing, has furnished no useful results.

Two years ago, Winkler and Stein proposed iodipin, an iodine compound of oil, for testing the motor functions when there is objection to the stomach-tube. Iodipin is unchanged in the stomach, but sets free its iodine in the intestine, so when the saliva gives the test for iodide, the iodipin must have passed the pylorus. The method has proven of fair value.

Cherwinski calls attention, in cases of dilatation, to a dulness four or five cm. in extent between the ninth and eleventh left intercostal spaces behind. It resembles pleurisy, but disappears if the patient leans forward, or if the stomach is empty.

Some years ago Charcot and Gilles de la Tourette observed in hysteria certain hyperesthetic areas in the neighborhood of diseased organs. Head has mapped out some such zones and finds hyperesthetic points over the skull in stomach affections. Other researches have established other such areas in gastric troubles, but their topography is very variable, and they have no diagnostic or prognostic significance.

III. PYLORIC STENOSIS, ULCER, HEMATEMESIS.

During the past year there have been over 70 articles on the pathology of pyloric stenosis in the new-born. Such stenoses are of three types—*anomalies of development*, *pyloric hypertrophy and spasm*. The anomalies are mostly absence of communication between stomach and bowel; more rarely, strictures due to some intra-uterine process (fetal peritonitis, compression by congenital tumor, syphilis, etc.). Hypertrophy constitutes 70 per cent. of the cases, and in these the muscular layer is most affected; the mucosa may be normal or the seat of gastritis, and the lumen may be so narrow as scarcely to admit a stilet. Weill and Péhu report two cases of spasmodic stenosis with death from other cause. The gross and histological examination showed an absolutely normal pylorus and stomach. They attribute the spasm to hyperesthesia. Pfandler thinks that some of the so-called hypertrophies found post-mortem are merely pylori which have remained in contraction after death, as the heart may remain in systole. With complete stenosis the symptoms begin immediately after birth; with hypertrophy, one to three months later. There is profuse vomiting of all milk ingested, and constipation. Dilatation of the stomach, peristalsis and pyloric tumor are seldom made out. Several have noted absence of free hydrochloric acid and excess of lactic acid. The usual treatment consists of heat over epigastrium and regulation of nursing. Weill and Péhu recommend small doses of sodium bicarbonate; Pfandler advises lavage and Heubner irrigation of the bowel. Surgical treatment in 14 cases was followed by nine deaths. When the diagnosis between spasm and hypertrophy is doubtful, medical treatment should be tried first, but not continued long enough for the child to become too weak to be operated upon. Mild cases of stenosis in infants undoubtedly pave the way for later stomach affections, notably early dilatation.

Of rare causes for pyloric stenosis in the adult Caminiti reports a true myoma, and Leven and Lipscher each

report tuberculosis. The existence of spasmodic stenosis is generally accepted, and Bouveret thinks it can sometimes be detected by palpation in thin subjects, especially in women whose habitual use of the corset causes a lowering of the pylorus and its approach to the vertebral column. In the course of painful hyperchlorhydria one may observe a small movable cylindrical tumor the size of a finger, painful on pressure and of fairly hard, though not woody, consistency. It is not felt after the painful crisis is past. In the stenoses with periodical vomiting a tolerant stomach allows an accumulation of digestive residues for several days, then by a crisis of vomiting thoroughly empties itself. It again rests for a time, then again empties itself, and so forth.

Soupault cites nine cases of the paradoxical condition of pyloric stricture without retention. The symptoms were: Pains some hours after meals; sour regurgitation; frequent vomiting, and failure of nutrition. The stomach-contents after a test-meal shows a variable hyperchlorhydria, but the stomach seems to empty itself normally. The stomach is not dilated, and in the morning before eating is either empty or contains a small amount of pure gastric juice without alimentary residue. Gastro-enterostomy showed a pyloric lesion in each case: in six cases it was ulcer; in one, cancer; in two, adhesions. Immediate disappearance of the symptoms followed operation. There were no definite signs of retardation, though the evacuation might be painful, and one asks if there was a stricture. The symptoms seem to confuse hyperchlorhydria and Reichmann's disease. Reichmann's conception was: At first, a simple functional hyperchlorhydria; the highly acid secretion then gradually prolongs its production, continuing it even during the intervals of no digestion. Thus gastrosuccorhea is established; at first intermittent, finally continuous. As a complication, appears the peptic ulcer, or perhaps pyloric stenosis, either spasmodic with hyperchlorhydria as its cause, or anatomically dependent upon an ulcer or its cicatrix.

Mathieu and Laboulais have insisted on the frequency of ulcer in the grave forms of Reichmann's disease, but Soupault's cases show that even when Reichmann's syndrome is not associated with alimentary retention, pyloric ulcer is very frequent and may be present in cases which are clinically only hyperchlorhydria. Soupault, later, reports 18 gastro-enterostomies for Reichmann's disease, in all of which a pyloric ulcer was found. At operation, however, the exploration of the pylorus is uncertain, and surgeons have been deceived into supposing that they were dealing with pyloric spasm simply because they were unable to find a lesion. So it is probable that ulcer, much oftener than is supposed, precedes hypersecretion, for if it is difficult to diagnose ulcer, it is well-nigh impossible to determine the absence of ulcer, which lesion is probably often in existence for some time before it manifests itself clinically.

After section of the vagi below the diaphragm, Van Yzeren has observed a round ulcer of the pylorus in a rabbit, though there was constantly diminished acidity as the result of the section. Dalla Vedova failed to get ulcer from vagus section, but obtained some gastric ulcerations from lesions of the cardiac plexus and splanchnics.

Dieulafoy has insisted on the frequency of "appendicular black vomit" or hematemesis after appendicitis, and quotes six cases of such vomiting after the operation. Charlot also reports five cases, only one of which had not been operated upon. May not the operation on a patient already poisoned by appendicitis have played a rôle in the production of the hemorrhage? Certainly hematemeses have followed the simple administration

of chloroform. Lancereaux believes in neuropathic hemorrhages from the alimentary tract which appear at times in gouty or rheumatic patients. Hirschfeld reports hematemesis for which no cause could be found except arteriosclerosis. Dumont has seen hematemeses after influenza, and their association with metrorrhagia would seem to denote a general rather than a local origin.

IV. CANCER.

Tripiet and Duplant have recently cast doubt upon the possibility of the transformation of simple ulcer to cancer, claiming that a cancer could not develop in a region rendered anemic by the obliterating endarteritis of gastric ulcer. But Hayem has found a few limited spots of cancer on the edges of an old ulcer, at the base of which there was no trace of epithelial infiltration; and Hoche has discovered at the bottom of an evidently old ulcer a cancerous nodule secondary to cancer of the esophagus. Hayem reports four cases of ulcer on the lesser curvature, just at the pylorus, in which the symptoms of cancer suddenly replaced those of ulcer. A striking phenomenon of the cancerization of an ulcer is the rapid change from hyperchlorhydria to achlorhydria. In analyses made some days apart there is steady and progressive diminution in acidity.

Boas has summed up the clinical characters in 141 cases of cancer. The first symptoms may brusquely follow an accident or error in diet and so mislead the physician; or hemorrhage may be the first sign and lead to the diagnosis of ulcer. Anorexia is far from constant, the appetite being good in one-third of the cases. There is no relation between the preservation of the appetite and that of the motor or secretory functions. Cancer of pylorus and fundus are about equal in number. The former is generally accompanied by retention, has a more rapid course, is more painful, and has more tendency to hemorrhage. In cancer with pyloric obstruction, the production of hydrochloric acid is more persistent. Constipation is the rule, diarrhea being present in only four out of 53 cases. Edema of the ankles was noted six times early in the disease, and eight times later in its course. The supraclavicular lymph-node was found enlarged in one case only, and this well advanced. Umbilical metastasis was noted twice.

V. NEUROSES.

For hysterical eructations preceded by the swallowing of air, Bouveret, in 1891, proposed the name "hysterical aerophagia." Since then the condition has been found to be rather common, and Lyonnet and Vincens believe that it may simulate flatulent dyspepsia, or by dilatation of the stomach give rise to actual gastric troubles. Mathieu and Follet call attention to the volley-like character of the belchings, and apply the term "press-the-button belchings" to those of patients in whom pressure on a given point of the body is followed by a veritable crisis of eructations. They think dyspepsia the underlying cause, the patient instinctively endeavoring to investigate the kind of discharges which he has found to give relief. The author believes that there are two types, the dyspeptic and the hysterical. In the dyspeptic type the patients swallow air to stimulate the elimination of the gases which distend the stomach. In these aerophagia is slowly established, remains moderate and can be cured by simply getting the patient to refrain from swallowing air. In the hysterical type the beginning is brusque, the development intense, and the action beyond the power of the will. Aerophagia is in certain cases a serious affection accompanied by uncontrollable vomiting and malnutrition; or the distention may give rise to important respiratory and circulatory disturbances. It is analogous to rumination, the stomach,

however, ejecting only gas instead of a mixture of gas and aliments. In some cases the air accumulates in the esophagus and does not reach the stomach.

Kaplan's "nervous pseudotympanites" is distinguished from true tympanites by the collapse of the belly under chloroform or following suggestion, without the emission of any gas. The cause of the exaggerated prominence of the abdomen is the lowering of the diaphragm (sometimes painful) and its fixture in the position of forced inspiration. Suggestion is the best treatment.

VI. MISCELLANEOUS.

Einhorn has a new clinical syndrome which he calls "pseudohyperchlorhydric achylia gastrica." His name achylia gastrica refers to a functional absence of gastric juice, the stomach-contents after a test-meal containing neither hydrochloric acid nor ferments. This new condition shows such stomach-contents, but presents the signs of hyperchlorhydria; namely, good appetite, sometimes abnormal; painful crises, one-half to two hours after eating, quieted by alimentation, and very little or no sensitiveness to pressure in the epigastrium. An attempt at treatment by sodium bicarbonate might temporarily confirm the wrong diagnosis, for the bicarbonate seems to have an analgesic action in the late digestive pains of insufficient secretion. It is certainly of interest that the symptoms of hyperchlorhydria may accompany a gastric juice not only hypoacid but even neutral, and that in the absence of analysis one would be in error regarding the true condition of the stomach. Strauss has shown that the functions of absorption and nutrition in achylia gastrica are much more normal than one would suppose.

In two cases of acute dilatation Borchard has found a fold of mucous membrane obstructing the pyloric orifice. Matweew reports two cases following abortion, and Kausch two cases subsequent to transverse myelitis.

Of foreign bodies, Siraud and Keppelin have removed from the stomach of a fifteen-year-old girl, a woven-hair cast of the stomach, weighing about one and one-half pounds. The patient was hysterical, and frequently swallowed hair, paper and thread. She experienced only slight gastric symptoms. Derby saw a woman who passed without pain a key three and one-half inches long and weighing nearly four-fifths of an ounce, which she had swallowed seven days before. Tuffier reports a man who carried a fork almost nine inches long in his stomach for 78 days, without any pain whatever.

The gastric troubles secondary to other lesions are considered in many papers, such as gastropathies of cardiac origin, vomiting of pregnancy, acholuric icterus of dyspeptic nature, gouty affections of stomach and intestines, gastric syphilis, etc.

The influence of stomach conditions on other organs is treated in papers on stomach vertigo, nightmare, the influence of the alimentary régime on the mental condition and the psychic functions, dyspeptic glycosuria, cardiac troubles of gastric origin, the liver in dyspeptics, etc.

VII. THERAPEUTICS.

For anorexia, Hoenig, following Letulle, commends application to the epigastrium of solid carbonic acid at 60°-80° below zero. The alkaline persulphates and "persodine," a stable solution of the persulphates of sodium and ammonium, are also highly spoken of. The dose of persodine is one and one-half grains half an hour after each meal (Robin).

For hyperchlorhydria, Clemm and Aldor use sugar rather than atropin, for they find that the addition of 20 per cent. of sugar to milk diminishes the gastric secretion and lessens the acidity nine-tenths.

Fremont's "gasterine" seems to have given good re-

sults in diminished acidity with intestinal fermentation and diarrhea, but Soupault cites six of these cases that were cured just as easily with simple hydrochloric acid lemonade.

Korczynski has found that mustard, horse-radish, or pepper added to a test-meal causes rather a diminished secretion, though the motility is stimulated. Roux finds peptone to be a good excitant of gastric motility.

The fact that Debove has obtained immediate relief by lumbar puncture in some gastric crises which were probably tabetic, leads us to think of the possibility of high tension of the cerebrospinal fluid as the cause of certain gastric crises.

For years lavage of the stomach has been considered a panacea, and the author fears that there is now a reaction with a tendency to discard this useful procedure. There certainly is some risk when the stomach is ulcerated and in danger of perforation or hemorrhage. But even in these cases, Lucas-Champonnière has shown that the stomach is never in repose when bleeding, and lavage may allow rest by causing cessation of vomiting and pain. He has stopped gastric hemorrhage by lavage in several instances. The author reports the stoppage of bleeding by lavage, after other measures had failed, in two cases of cancer. He concludes that gastric hemorrhage is not an absolute contraindication to lavage when this is otherwise indicated by fermenting masses in the stomach, or by incessant vomiting. Bourget uses ferric chlorid in his lavage-water; Ewald employs large quantities of ice-water.

Mathieu and Laboulais condemn lavage as enfeebling the muscular power of the stomach; Robin thinks it may cause hyperchlorhydria; while several authors, in condemning the abuse of lavage, speak highly of its proper use. It has undoubtedly been abused, but it remains one of the best methods of gastro-intestinal disinfection, with favorable action on the motor functions of both stomach and intestine.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting Held September 4, 1902.

The President, Dr. John M. Fisher, in the Chair.

Endothelioma of the Uterus.—Dr. L. H. Prince of Philadelphia reported the following case, which furnished a subject for discussion: The lesion occurred in a woman of sixty years, and was recognized from a study of the debris of a thorough curettement. The earliest microscopical findings were of the nature of a pseudomembranous inflammation of the endometrium, and because of these findings the curettement was resorted to and the endothelioma was discovered. Operation was advised and successfully performed by Dr. Wilmer Krusen. The organs were found to be freely movable, and no infiltration of any of the viscera could be recognized. The patient became infected, possibly from the suture material used, and died on the 14th day after the operation. The cause of death was peritonitis, gangrenous in character, and the bacterium found was the staphylococcus pyogenes albus. The kidneys showed some chronic interstitial change, together with acute engorgement. That possibly accounted for the casts and albumin observed during life and which appeared some days after operation. Only a partial postmortem was permitted. The uterus was carefully studied microscopically, and two distinct types of neoplasm recognized. The one occupying the inner area of the uterus was clearly an endothelioma, apparent from the character.

of the cells found, together with their tubular arrangement. The second type consisted of a papillary adenomatous growth quite typical in structure and arrangement. The evidence is clear that the two neoplasms do not transform one into the other, but remain distinct. Certain peculiar large cells present in this region were considered as decidual cells persisting in this uterus until an unusually late period in life. The paper closed with a review of the literature on the subject of endothelioma of the uterus, in which was noted the rarity of this variety of neoplasm, together with the possibility of its occurring at any age, the ages so far observed ranging from 18 to 60 years.

Dr. C. F. Nassau said that the condition described in the paper showed so few similar cases on record that he hardly saw how those who really know nothing about it could find very much to discuss. It takes rather an expert pathologist, he thought, one who spends many hours weekly at the microscope, to tell the differences between perithelial and endothelial growths, which, however, were beautifully shown in the drawings exhibited by Dr. Prince.

Dr. G. G. Ross remarked that the condition of endothelioma of the uterus is so rare that he did not suppose it had occurred as many as four times. Compared with the rest of the growths in the uterus, it would seem that it must be difficult to recognize, and perhaps that is the reason it is not more commonly reported. The proportion of endotheliomatous to other tissues in the uterus is so small that the occurrence of malignancy, originating in it as often as four times, is another argument in favor of a radical procedure in handling even suspicious cases of uterine malignant growths.

Dr. Prince, in closing, said that in regard to the frequency of endothelioma, perithelioma, etc., occurring in the genitalia, the facts stated are well known to us. There is no reason why we should expect to find these peculiar growths in the uterus simply for the reasons mentioned. In other situations the tumors are rather common. There is no question about the excessive malignancy of these bodies. The peculiarity of the history is marked; the duration of the condition three or possibly four years, with the quantity of the discharge slight, at no time excessive, never hemorrhagic, growing steadily, however, toward an offensive character. Dr. Prince regretted that Dr. Krusen was not present, because the details of the clinical aspect were followed by him more closely than by the speaker himself. It was peculiar, he said, that the existence of the patient whose case he had reported should have been terminated by gangrenous peritonitis, and that staphylococcus pyogenes albus should have been found. The question must arise, Did infection occur at the time of operation, or secondarily? He was inclined to think that it occurred secondarily. The marked evidence of sepsis, the peritonitis found postmortem, and the low temperature make the case interesting. Dr. Prince thought that the suture material used was chromicized catgut.

One Hundred Obstetrical Cases.—In this paper, presented by Dr. Edwin Rosenthal, the author wished to show the average run of these cases in private practice. As examples, 100 cases were reported taken from the case-book of the author, and somewhat extended reports were given of cases which the author deemed of more than ordinary interest.

By comparison with a former paper a uniformity was shown in the average occurrence of exceptional cases. In the present paper the author placed peculiar emphasis upon the nationality of the patient, as a factor, together with the age of the patient, as well as the number of the confinement. The proportion of males to females born showed an increase in the number of males—59 males to 41 females. In the author's former paper,

entitled "One Thousand Obstetrical Cases," the proportion was 568 males to 446 females. There were 17 deaths among the 100 children, and two sets of twins. The majority of the presentations were by the head, necessitating the use of the forceps 15 times. Of the 15 cases, 12 were male children and three were females, making the proportion one female child needing the forceps to four male children. Regarding the use of forceps, the author gave his rule, which he deemed sufficiently elastic to suit most cases, as follows: Any case suitable for the use of the forceps should have them applied if after a period of three hours no progress whatever is made towards the delivery of the child. The author described suitable forceps cases, those cases that can possibly be delivered with the aid of the instruments, such as an occipital anterior position, right or left. An occipital posterior position, right or left, was always a debatable condition, and the use of the forceps should not be considered as the only method to pursue. Many of these positions are unsuitable for forceps, and the question of a podalic version or section may need to be considered.

The author objected to the indiscriminate use of antepartum and postpartum douches as of doubtful utility. Douches should only be used in cases of infection, and then for special purposes. The author was in favor of the use of an anesthetic always when any operative procedure was in order, and generally when the relief of great pain was required. Lacerations of the perineum were always repaired, though in a leisurely manner, that is, after the lapse of a day or so. The author, however, was in favor of postponing such operations until involution was completed, a period of two to three months, being firmly persuaded that the latter course gave better results than the former. The author wished obstetrics to be a surgical procedure; and being thus considered, all the rules of hygiene and cleanliness should be the fundamental principle in practice.

Dr. John C. DaCosta said his experience with left occipital posterior position had shown that it was generally easily converted into anterior, particularly if the forceps or one blade as a vectis is used. The most of my cases have been American women, and in these we know that the heads of the babies have been larger than those of foreigners. I was glad to hear Dr. Rosenthal speak of the disuse of douches. Long ago I satisfied myself that douches, unless for some purulent or similar discharge, should not be used, and my belief was confirmed by an article in a German paper, describing experiments in which streptococci had been implanted in unsterilized vaginae. The streptococci were killed within an hour. The vaginae were then sterilized and the streptococci again implanted, when it took 24 hours to kill them. This I thought was a strong argument against the douche. I think the author is rather free in the administration of ether in obstetric work. I would like to ask what proportion of hemorrhage he has had in cases in which he has used ether. I have seen very serious results from its use. In one case in consultation I tore the inhaler from the hand of the anesthetizer, and had to use active means to keep the woman from dying. The woman's heart, lungs and kidneys were sound. I think nature intended that woman should have a certain amount of pain to help expulsion. We know that ether affects, if it does not entirely relax, the muscular tissue, and we do not want this to result in hemorrhage.

Dr. M. M. Franklin congratulated Dr. Rosenthal on his paper, but regarded the infant mortality mentioned as rather high, which was perhaps due to the foreign nationality of the patients. Repair of the perineum should be made immediately after labor. As an anesthetic I have never used anything but ether, and have

never noticed any bad results. In some of my cases postpartum hemorrhages have occurred, but I think this would have happened, no matter what anesthetic was employed. In every case of occipitoposterior presentation I have been able to deliver without section or craniotomy. Perhaps this has been due to good fortune rather than to skill, but I think with Dr. DaCosta that with patience and the use of forceps we can secure the anterior position, or deliver as a posterior presentation with, of course, more or less laceration of the maternal structures.

Dr. J. M. West said that a paper of this character is always of extreme interest to the members of the profession, particularly to those practising obstetrics. I do not altogether agree with the author of the paper concerning the subject of anesthetics. I am partial to chloroform, and use it invariably, unless the conditions are such that I am unable to watch it. If given carefully, I believe it is the safest anesthetic we have in obstetric practice.

The question of posterior rotation of the occiput is extremely interesting, and not always easy to settle in the best manner. I have never met with a case of rotation of the occiput posteriorly in which delivery could not be made safely by means of the forceps. I recall two instances of this kind in which spontaneous delivery occurred, and one was in a primipara. It occurred without injury to the perineal floor, and in spite of the fact that the child was quite the average size. As late as yesterday morning, without an anesthetic, I delivered a woman of a child weighing at least 10 pounds. In this case I am quite sure that the natural forces of labor were a very material help to me in securing safe delivery of this child without injury to the perineal floor. This, however, I think, is an unusual condition, and the method one that would not be admissible as routine practice.

Dr. Rosenthal in closing the discussion explained that the difficult cases mentioned in his paper were those to which he had been called when the woman had been in labor, perhaps 10 to 24 hours or longer, and in which it was impossible to rotate the head either way. In the fatal case referred to, if there had been a consultation to devise a means of ending the labor, the woman's life might have been saved, for there was nothing shown by the postmortem as a cause of death, nothing that could be considered a pathological condition, and he was forced to the conclusion that death was the result of an exhaustion of the vital forces, due to the position of the head, this being a position that could not be remedied either by the woman's own unaided efforts or the use of the instruments. In cases in which the promontory of the sacrum is a little too large, and the head is firmly fixed in the fourth position, a Cesarean section should be done. The use of the obstetrical forceps in such cases should always be a debatable question. The exceptional cases are those in which the uterus has been drained of its liquid contents, and the head is in a posterior right or left position. I believe if the child is alive, a section is the right procedure, and gives greater hope to both child and mother than a forcible instrumental delivery. But, if the child be dead, craniotomy is justifiable. If the instruments be applied in this position, and the pelvis large enough, or the head of the child small enough, to be forced through, delivery can be accomplished, but the perineum is invariably torn, and other and greater harm may be inflicted. Anesthetics should be employed when we apply the instruments. And in this regard I am glad that Dr. DaCosta referred to hemorrhages. The first death I saw in obstetrics was due to a postpartum hemorrhage, in a woman delivered of twins without a doctor, nurse, midwife or anesthetic. I know that hemorrhages

sometimes follow ether, but there is some other cause at work. A short time ago I saw the most frightful hemorrhage, in which I gave ergot hypodermically, used saline effusions, and so on, and finally used iodoform gauze to plug the uterus. The cause of the hemorrhage was a remnant of membrane. I think that postpartum hemorrhages are generally due to something left behind, though, of course, ether may sometimes produce them. I should make it a rule of practice in all cases of hemorrhage of this character, to *first* look for the cause and then treat it. Too much douching is wrong. I believe we ought to use an anesthetic in all obstetrical operations, but I most certainly believe it is wrong to increase our obstetrical practice by the employment of anesthetics.

BOOK REVIEWS.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XIV. Fourteenth Session, held at Richmond, Va., November 12, 13 and 14, 1901. Published by the Association. 1902.

THIS volume of transactions comprises 40 papers on general surgical and gynecological topics. Among those of special interest is one on the disadvantages of the vaginal route for pelvic operations, by Dr. Joseph Price. Others of like importance are: "Treatment of Tumors Complicating Pregnancy," by Dr. R. B. Hall; "A Unique Case of Extra-uterine Pregnancy," by Dr. H. Tuholske, and a paper on some of the disadvantages of overzealous operating and drainage in appendicitis, by Dr. R. T. Morris.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (3d) edition. Octavo volume of 756 pages, with 474 engravings, of which 60 are in colors and 22 colored plates. 1902. Philadelphia and New York: Lea Brothers & Co. 1902.

THE present revision has transformed this well-known treatise into what is practically a new work, which, admirable as it was before, in its new guise, stands easily at the head of our American literature of practical general gynecology.

The actual number of pages added is 44, and of illustrations 21; but there has been so thorough a revision and rearrangement of the text that about 100 pages of new matter appear, and enough of the older drawings have been discarded to permit the insertion of 25 new engravings and 14 plates without appreciably increasing either the convenient size of the volume or its moderate price. The condensation has been effected mainly by a complete remolding of the sections on Etiology, Pathology, Symptomatology, Physical Signs, Diagnosis and Differential Diagnosis, which, all through the book, have been taken out of the discursive paragraph form and clarified by compact arrangement in tables and parallel columns. In this way extensive additions have been possible, while at the same time the practical usefulness of the book has been greatly enhanced, both for the class-room and for the general practitioner, to whom especially the tables on differential diagnosis should prove of the greatest assistance.

The illustrations throughout are of the highest order, and without exception tell a clear and definite story. An innovation that will be appreciated is the introduction of a series of monochrome plates presenting the successive steps of important operations; for example, hysteromyomectomy and vaginal hysterectomy are respectively shown in 15 plates and 15 drawings.

To advert now to the subject-matter itself, we find it everywhere permeated by a spirit of broad-minded common sense, a sort of radical conservatism that has only the welfare of the patient at heart, and neither entails unnecessary risks from operation nor counsels needless mutilations, while on the other hand the evils of long continued palliative procrastination in serious conditions are, no less faithfully described. The application of electricity, for example, in the treatment of endometritis, pelvic peritonitis and myoma is roundly scored by the author, who says in his article on the latter topic that "the survival of the electrical method in gynecology depends chiefly upon the patient's ignorance of its inadequacy and dangers, upon her worship of the mysterious, upon an unreasoning dread of operative measures, and upon a desire to grasp any other promising means of relief." He is no less drastic in his condemnation of that species of per blind office gynecology which can see no further than the interior of the uterus, and pays no heed to the general systemic condition usually underlying the chronic endometritis, and which its caustics and tampons are powerless to heal. "Topical treatment," he says, "should seldom be long continued. It has a more legitimate place as a supplement than as a substitute for systemic and operative treatment. A reproach will be lifted from the medical profession when the indiscriminate use of topical treatment has been relegated to the dark ages of gynecology." It is difficult in a work so replete with interesting matter to select topics for special comment, but the often neglected subject of preparation for operation is especially well discussed, and the author's insistence on the importance of securing a gas-free bowel before laparotomy as the best remedy for postoperative tympanites deserves mention. In the matter of drainage he adopts the modern view and is inclined to reverse the old-time apothegm and say, "When in doubt, don't drain."

Pelvic massage properly done (preferably by a woman) is of great value as an adjuvant to other treatment, and an admirable section with a large number of illustrations is devoted to it. In his discussion of the comparative merits of the vaginal and abdominal routes for pelvic operations the author shows himself reluctant to give up the lower mode of approach, so dear to the gynecologist, since it is one of the hall-marks of his caste; but he finally concludes by admitting that "the vaginal route was for a time much in vogue, but at present among conservative surgeons the tendency is to return to the abdominal route." The author's method of end-to-end approximation of the broad ligaments in hysterectomy and his operation of perineorrhaphy are both based on the soundest principles, although of the latter operation it may be said with truth that every man should do his own.

From every standpoint, therefore, we have nothing but praise for the work so eminently adapted to satisfy student, practitioner and surgeon and which is a credit both to American gynecology and American publishing.

THE ESSENTIALS OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL, FOR THE USE OF STUDENTS. By E. A. SCHÄFER, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh; formerly Jodrell Professor of Physiology in University College, London. Sixth Edition, revised and enlarged. With 463 illustrations. Lea Brothers & Co., Philadelphia and New York, 1902.

THIS new edition of Schäfer's well-known histology has been considerably enlarged, partly by additions to the text, especially that descriptive of the structure of the central nervous system, a proper knowledge of which is so essential to students of medicine, and partly

by the provision of new illustrations, the majority of which have been drawn expressly for the book and are truly admirable. We can only repeat our warm words of praise for previous editions, and again unhesitatingly recommend the book to all beginners.

BOOKS RECEIVED.

The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

TYPHOID FEVER. By J. T. Moore, M.D. 12mo, 155 pages. G. P. Engelhard & Company, Chicago.

GENERAL PARESIS. By Robert Howland Chase, M.D. 12mo, 291 pages. P. Blakiston's Son & Co., Philadelphia.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY, 1901. By Henry B. Ward, M.D., Secretary. 8vo, 294 pages.

DEVELOPMENT AND EVOLUTION. By Prof. James Mark Baldwin. 12mo, 395 pages. The MacMillan Company, New York.

THE MEDICAL DIRECTORY OF THE CITY OF NEW YORK. By the Medical Society of the County of New York. 12mo, 594 pages.

ESSENTIALS OF HISTOLOGY. By Louis Le Roy, M.D. 12mo, 263 pages. W. B. Saunders & Company, Philadelphia and London.

COMPEND OF SURGICAL PATHOLOGY. By Alfred Edward Thayer, M.D. 12mo, 322 pages. P. Blakiston's Son & Co., Philadelphia.

DISEASES OF THE STOMACH. (Third Edition). By John C. Hemmeter, M.D. 8vo, 894 pages. P. Blakiston's Son & Co., Philadelphia.

PRACTICAL DIAGNOSIS (Fifth Edition). By Hobart Amory Hare, M.D. 8vo, 698 pages. Lea Brothers & Co., Philadelphia and New York.

DISEASES OF THE RECTUM AND ANUS. (Second Edition). By Samuel Goodwin Gant, M.D. 8vo, 687 pages. F. A. Davis Company, Philadelphia.

ESSENTIALS OF THE DISEASES OF THE EAR. By E. B. Gleason, M.D. 12mo, 214 pages. W. B. Saunders & Company, Philadelphia and London.

THE TREATMENT OF FRACTURES. (Third Edition). By Charles Locke Scudder, M.D. 8vo, 485 pages. W. B. Saunders & Company, Philadelphia and London.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION, 1901. By Frank Hugh Montgomery, M.D., Secretary. 8vo, 216 pages. Rooney & Otten Printing Co., New York.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS AND PHARMACOLOGY. (Fourth Edition). By George Frank Butler, M.D. 8vo, 895 pages. W. B. Saunders & Company, Philadelphia and London.

A TEXT-BOOK OF SURGICAL PRINCIPLES AND SURGICAL DISEASES OF THE FACE, MOUTH AND JAWS. By H. Horace Grant, M.D. 8vo, 231 pages. W. B. Saunders & Company, Philadelphia and London.

ATLAS AND EPITOME OF TRAUMATIC FRACTURES AND DISLOCATIONS. By Professor H. Helferich. Translated and Edited by Joseph C. Bloodgood, M.D. 12mo, 353 pages. W. B. Saunders & Company, Philadelphia and New York.

THE INTERNATIONAL TEXT-BOOK OF SURGERY. (Second Edition). Edited by J. Collins Warren, M.D. and A. Pearce Gould, M.S. 8vo, vol. I, 965 pages; Vol. II, 1,122 pages. W. B. Saunders & Company, Philadelphia and London.